DOCUMENT RESUME

ED 422 204 SO 028 741

AUTHOR	Laporte, Bruno; Ringold, Dena
TITLE	Trends in Education Access and Financing during the Transition in Central And Eastern Europe. Social Challenges of Transition Series.
INSTITUTION	World Bank, Washington, DC.
REPORT NO	TR-361
ISBN	ISBN-0-8213-3912-5
ISSN	ISSN-0253-7494
PUB DATE	1997-00-00
NOTE	53p.
AVAILABLE FROM	World Bank, 1818 H Street, NW, Washington, DC 20433; telephone: 202-477-1234.
PUB TYPE	Information Analyses (070)
EDRS PRICE	EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Access to Education; Area Studies; Change; Change Strategies; Comparative Education; *Developing Nations; Development; *Educational Change; *Educational Economics; *Educational Finance; Educational Trends; Elementary Secondary Education; Foreign Countries; Social Change
IDENTIFIERS	*Europe (Central); *Europe (East)

ABSTRACT

This paper is one in a series of reports based upon data from the "Social Challenges of Transition (SCT)" database. This cross-country study examines empirical trends in access to and financing of education in nine Central and East European countries. The study substantially improves the understanding of the impact of transition on education systems, yet lack of comparable data limits the ability to address critical issues, including educational outcomes and qualitative changes in teaching methods and curricula. The paper investigates the impact of transition on education by identifying emerging empirical trends in access, financing, and delivery of education in the countries of Albania, Bulgaria, the Czech Republic, FYR Macedonia, Hungary, Poland, Romania, Slovakia, and Slovenia. Section 1 examines changes in access to education, as measured by trends in enrollments across education levels. Section 2 discusses the links between labor market developments and the education sector, highlighting the impact of structural shifts in employment on education. Section 3 discusses financing of education, describing changing financing mechanisms and trends in expenditures. Section 4 analyzes the changing situation for teachers in the region. Section 5 summarizes main findings and proposes directions for further research. (EH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 422 204

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

J. Feather

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Trends in Education Access and Financing during the Transition in Central and Eastern Europe

SO 028 741

RECENT WORLD BANK TECHNICAL PAPERS

No. 276 Johnson, *Quality Review Schemes for Auditors: Their Potential for Sub-Saharan Africa*

No. 277 Convery, *Applying Environmental Economics in Africa*

No. 278 Wijetilleke and Karunaratne, *Air Quality Management: Considerations for Developing Countries*

No. 279 Anderson and Ahmed, *The Case for Solar Energy Investments*

No. 280 Rowat, Malik, and Dakolias, *Judicial Reform in Latin America and the Caribbean: Proceedings of a World Bank Conference*

No. 281 Shen and Contreras-Hermosilla, *Environmental and Economic Issues in Forestry: Selected Case Studies in Asia*

No. 282 Kim and Benton, *Cost-Benefit Analysis of the Onchocerciasis Control Program (OCP)*

No. 283 Jacobsen, Scobie and Duncan, *Statutory Intervention in Agricultural Marketing: A New Zealand Perspective*

No. 284 Valdés and Schaeffer in collaboration with Roldos and Chiara, *Surveillance of Agricultural Price and Trade Policies: A Handbook for Uruguay*

No. 285 Brehm and Castro, *The Market for Water Rights in Chile: Major Issues*

No. 286 Tavoulareas and Charpentier, *Clean Coal Technologies for Developing Countries*

No. 287 Gillham, Bell, Arin, Matthews, Rumeur, and Hearn, *Cotton Production Prospects for the Next Decade*

No. 288 Biggs, Shaw, and Srivastiva, *Technological Capabilities and Learning in African Enterprises*

No. 289 Dinar, Seidl, Olem, Jorden, Duda, and Johnson, *Restoring and Protecting the World's Lakes and Reservoirs*

No. 290 Weijenberg, Dagg, Kampen Kalunda, Mailu, Ketema, Navarro, and Abdi Noor, *Strengthening National Agricultual Research Systems in Eastern and Central Africa: A Framework for Action*

No. 291 Valdés and Schaeffer in collaboration with Errazuriz and Francisco, *Surveillance of Agricultural Price and Trade Policies: A Handbook for Chile*

No. 292 Gorriz, Subramanian, and Simas, *Irrigation Management Transfer in Mexico: Process and Progress*

No. 293 Preker and Feachem, *Market Mechanisms and the Health Sector in Central and Eastern Europe*

No. 294 Valdés and Schaeffer in collaboration with Sturzenegger and Bebczuk, *Surveillance of Agricultural Price and Trade Policies: A Handbook for Argentina*

No. 295 Pohl, Jedrzejczak, and Anderson, *Creating Capital Markets in Central and Eastern Europe*

No. 296 Stassen, *Small-Scale Biomass Gasifiers for Heat and Power: A Global Review*

No. 297 Bulatao, *Key Indicators for Family Planning Projects*

No. 298 Odaga and Heneveld, *Girls and Schools in Sub-Saharan Africa: From Analysis to Action*

No. 299 Tamale, Jones, and Pswarayi-Riddihough, *Technologies Related to Participatory Forestry in Tropical and Subtropical Countries*

No. 300 Oram and de Haan, *Technologies for Rainfed Agriculture in Mediterranean Climates: A Review of World Bank Experiences*

No. 301 Mohan, editor, *Bibliography of Publications: Technical Department, Africa Region, July 1987 to April 1995*

No. 302 Baldry, Calamari, and Yaméogo, *Environmental Impact Assessment of Settlement and Development in the Upper Léraba Basin*

No. 303 Heneveld and Craig, *Schools Count: World Bank Project Designs and the Quality of Primary Education in Sub-Saharan Africa*

No. 304 Foley, *Photovoltaic Applications in Rural Areas of the Developing World*

No. 305 Johnson, *Education and Training of Accountants in Sub-Saharan Anglophone Africa*

No. 306 Muir and Saba, *Improving State Enterprise Performance: The Role of Internal and External Incentives*

No. 307 Narayan, *Toward Participatory Research*

No. 308 Adamson and others, *Energy Use, Air Pollution, and Environmental Policy in Krakow: Can Economic Incentives Really Help?*

No. 309 The World Bank/FOA/UNIDO/Industry Fertilizer Working Group, *World and Regional Supply and Demand Balances for Nitrogen, Phosphate, and Potash, 1993/94-1999/2000*

(List continues on the inside back cover)

WORLD BANK TECHNICAL PAPER NO. 361
Social Challenges of Transition Series

Trends in Education Access and Financing during the Transition in Central and Eastern Europe

Bruno Laporte
Dena Ringold

The World Bank
Washington, D.C.

4

Copyright © 1997
The International Bank for Reconstruction
and Development/THE WORLD BANK
1818 H Street, N.W.
Washington, D.C. 20433, U.S.A.

All rights reserved
Manufactured in the United States of America
First printing April 1997

Technical Papers are published to communicate the results of the Bank's work to the development community with the least possible delay. The typescript of this paper therefore has not been prepared in accordance with the procedures appropriate to formal printed texts, and the World Bank accepts no responsibility for errors. Some sources cited in this paper may be informal documents that are not readily available.

The findings, interpretations, and conclusions expressed in this paper are entirely those of the author(s) and should not be attributed in any manner to the World Bank, to its affiliated organizations, or to members of its Board of Executive Directors or the countries they represent. The World Bank does not guarantee the accuracy of the data included in this publication and accepts no responsibility whatsoever for any consequence of their use. The boundaries, colors, denominations, and other information shown on any map in this volume do not imply on the part of the World Bank Group any judgment on the legal status of any territory or the endorsement or acceptance of such boundaries.

The material in this publication is copyrighted. Requests for permission to reproduce portions of it should be sent to the Office of the Publisher at the address shown in the copyright notice above. The World Bank encourages dissemination of its work and will normally give permission promptly and, when the reproduction is for noncommercial purposes, without asking a fee. Permission to copy portions for classroom use is granted through the Copyright Clearance Center, Inc., Suite 910, 222 Rosewood Drive, Danvers, Massachusetts 01923, U.S.A.

ISBN 0-8213-3912-5
ISSN: 0253-7494

Both authors work at the World Bank. Bruno A. Laporte is principal education specialist on the Education Team in the Human Development Department. Dena Ringold is a research assistant in the Human Resources Operations Division of the Europe and Central Asia Country Department II.

Library of Congress Cataloging-in-Publication Data

Laporte, Bruno
Trends in education access and financing during the transition in Central and Eastern Europe / Bruno Laporte, Dena Ringold.
p. cm. — (World Bank technical paper ; ISSN 0253-7494 ; no. 361). Social challenges of transition series)
Includes bibliographical references.
ISBN 0-8213-3912-5
1. Education—Economic aspects—Europe, Eastern—Statistics. 2. Education—Europe, Eastern—Finance—Statistics. 3. Labor market—Europe, Eastern—Statistics. 4. Education and state—Europe, Eastern. I. Ringold, Dena . II. Title. III. Series: World Bank technical paper ; no. 361. IV. Series: World Bank technical paper. Social challenges of transition series.
LC67.E852L36 1997 97-6531
338.4'337'0947—dc21 CIP

Table of Contents

LIST OF FIGURES iv
LIST OF TABLES iv
FOREWORD v
ABSTRACT vii
ACKNOWLEDGMENTS ix
INTRODUCTION 1
DATA SOURCES AND QUALITY 3
I. ACCESS AND PARTICIPATION 5
II. EDUCATION AND THE LABOR MARKET 13
III. EDUCATION FINANCING 19
IV. STAFF IN THE EDUCATION SECTOR 29
V. MAIN FINDINGS AND FURTHER RESEARCH 33
REFERENCES 35
TABLES 37

List of Figures

Figure 1 Female Share of the Labor Force (1993) 6
Figure 2 Pre-School Enrollment Indices (1989-1994) 7
Figure 3 Basic School Enrollment Rates (1990-1994) 7
Figure 4 General Secondary Enrollment Rates (1990-1994) 10
Figure 5 Technical Secondary Enrollments - 4-5 Year Programs (1990-1994) 11
Figure 6 Vocational Secondary Enrollments - 1-3 Year Programs (1990-1994) 11
Figure 7 Higher Education Enrollment Rates (1990-1994) 12
Figure 8 Unemployment and Education (1995) 14
Figure 9 Enrollments in Engineering Programs (1989-1994) 15
Figure 10 Enrollments in Social Science Programs (1989-1994) 16
Figure 11 Education Expenditures and GDP (1989 and 1994) 20
Figure 12 Public Education Expenditures and GDP Per Capita (1994) 21
Figure 13 Reduction in Real Public Spending for Education (1990-1994) 21
Figure 14 Per Pupil Spending Relative to GDP Per Capita (in nominal terms), 1994 22
Figure 15 Education Expenditures and Total Public Expenditures (1989 and 1994) 23
Figure 16 Education Expenditures by Category (1994) 24
Figure 17 Ratio of Students to Teaching Staff (1993) 30
Figure 18 Employment in the Education Sector (1989 and 1993) 31
Figure 19 Ratio of Average Wage in the Education Sector to Average Wage in the Economy (1989-1993) 31

List of Tables

Table 1 Secondary Enrollments by Type (1990-1994) 9
Table 2 Employment Changes (1991-1995) 14
Table 3 Expenditures on Student Transfers (1990-1994) 25
Table 4 Private School Enrollments (1994) 26

Foreword

Transition from central planning in Central and Eastern Europe has led to dramatic and rapid changes in the lives of millions of people. Democratic liberalization has empowered citizens through the provision of basic rights and freedoms and the development of civil society, while economic liberalization has brought the promise of improved living standards, and granted individuals increased choice in consumption, education, health and employment.

Despite remarkable expansion of opportunity, transformation has not come without great pain. Poverty has risen throughout the region, real incomes have declined, and crude death rates have climbed in many countries. Equality among households has suffered as a result of increasing income disparity and the erosion of access to basic social services. While the widening income gap is an expected side effect of transition, accompanying the liberalization of prices and wages, heightened social dissatisfaction threatens political stability and the success of economic reforms.

On the most basic level, economic recovery and growth in transition depend upon the capacity of individuals to respond and adapt to the changing requirements of market society. The socialist economies embarked upon reform with strong legacies of state commitment to the development of human capital. However, rigidities of central planning and bureaucratic control limited the quality and efficiency of social services. Transition has exacerbated these trends, as unprecedented collapses in output and consequent fiscal crises have undermined the abilities of governments to sustain pre-transition levels of access to social programs and services. At the same time, the introduction of market forces has opened up an array of opportunities for innovation in the provision and financing of health, education and social insurance, and for addressing increases in poverty and unemployment.

This paper is one in a series of reports based upon the *Social Challenges of Transition (SCT)* database. Developed by the Human Resources Operations Division of the Central and Southern Europe Departments of the World Bank, *SCT* was initiated in order to document empirically the evolving effects of transition on individuals and families. The project examines the social risks facing people and the policy responses taken by governments since 1989, by monitoring indicators of health, earnings, education, labor markets, pensions, social assistance and poverty. The findings contained in this initial set of thematic cross-country papers make a valuable contribution to our understanding of social developments in Central and Eastern Europe five years into the transition. They provide a basis for further improvements in the content and quality of our support to the countries in the region.

Kenneth G. Lay
Director
Country Department I
Europe and Central Asia Region

Hans Apitz
Acting Director
Country Department II
Europe and Central Asia Region

Abstract

Education has emerged as an essential component of the transition to a market economy in Central and Eastern Europe (CEE). Economic growth and the development of civil society during transition rest on the capacity of well-educated workers and citizens to adapt to changing conditions. During the initial phases of the transition, appropriate education has emerged as one of the most important determinants of labor market status and earnings potential. The education and training systems of the region are well positioned to facilitate the transition to a market economy. Without exception, the countries of the region inherited education systems which succeeded in providing broad access to pre-school, basic and secondary education. However, the legacies of central planning, including overly narrow specification of skills, inefficiencies in financing and delivery, and political control of curricula and enrollments, have constrained systems from fully adjusting to market conditions.

Education systems have adjusted rapidly during the transition. Political liberalization and deregulation have virtually eliminated ideological control over curricula and teaching materials. Students now face increased choice in their selection of courses, and the duration of studies. At the same time, the transition has revealed serious systemic weaknesses in education and training systems in the region. Education under socialism was targeted toward the needs of the socialist state, emphasizing vocational and career-specific training, at the expense of more general academic programs. High unemployment rates, especially for the poorly educated and those with specialized vocational training, illustrate the extent to which education systems prepared students for the employment patterns of the socialist regimes. The increased popularity of general secondary and university programs, which broaden access to diverse employment options, indicate that students have been responding to labor market trends in their selection of courses and degree programs.

Throughout the region, economic contraction and fiscal crisis have meant a decline in real resources available to the education sector. Countries have responded to growing budget pressures in a number of ways, through privatizing services, and devolving financing authority to local governments and families, which often lack the necessary resources. This has had serious implications for the quality and equity of access to education. Enrollments have declined at the preschool, and some cases primary levels, as a result of the elimination of subsidies for child care and educational materials.

While real resources have declined, most countries have increased or maintained funds for education as a share of GDP, reaching spending levels which are equal to, or higher than, West European countries at much higher income levels. However, increased spending has not translated into greater efficiency in resource allocation. Serious inefficiencies inherited from central planning, including overstaffing of educational institutions, and underuse of facilities limit the ability of education systems to adapt to market conditions.

This cross-country study examines empirical trends in access to and financing of education in nine Central and East European countries. While this study substantially improves our understanding of the impact of transition on education systems, lack of comparable data limits our ability to address critical issues, including educational outcomes and qualitative changes in teaching methods and curricula.

Acknowledgments

This report is part of a multisectoral study of the Social Challenges of Transition (SCT) in Central and Eastern Europe. The authors wish to thank Ralph W. Harbison, Division Chief, Human Resources Operations Division, Central and Southern Europe Departments for his continued support and leadership of the SCT project.

This study would not have been possible without generous assistance and contributions from officials from Ministries of Education and Finance, Central Statistical Offices, and other counterpart agencies throughout Central and Eastern Europe. From the World Bank, James Stevens, Jan Rutkowski, Dorota Holzer and Gnanaraj Chellaraj provided invaluable assistance during the development of the analytical framework of this study, and with the subsequent data collection effort.

Augustine Papali conducted much of the data processing and analysis during the initial phases of the study. His contributions were instrumental to the design of the SCT database for the education sector.

The authors would also like to thank Mr. Kemal Dervis and Mr. Andrew Rogerson, for their enthusiasm and support during the early stages of the SCT project. Valuable comments on previous versions of this paper were provided by Jee-Peng Tan, Anthony Wheeler, Michael Mertaugh and Arntraud Hartmann. Many other staff working in the education sector in the ECA region, as well as the participants in the 1996 SCT workshop read and offered useful comments and suggestions.

Introduction

The transition from socialism in Central and Eastern Europe (CEE) has had fundamental implications for education and training systems in the region. The ability of countries to adapt to the introduction of market society depends upon the capacity of individuals to respond to changing economic conditions, and to shape the emerging democracies through participation in civil society. In many respects, education systems in CEE are well positioned vehicles for reform. Without exception, the education and training systems at the outset of transition were fully developed at all levels, providing access to pre-school and basic education which outranked some OECD countries. The quality of education in certain fields, especially math and sciences, was, and remains, exceptional. A recently released study of achievement in math and sciences among eighth grade students ranks students in a number of CEE countries among the top countries internationally (U.S. Dept. of Education, 1996).

However, the transition to a market economy has exposed, and even exacerbated, serious weaknesses in the education systems in CEE, many of which reflect overall problems with the system of central planning. Education was directed toward the productive and ideological goals of the socialist regimes, and thus has been limited in its ability to respond to changing economic structures and employment patterns essential for the success of a market economy. Under the previous regime, school systems and curricula were subject to rigid control by central governments. Curricula and teaching styles reflected socialist values, emphasizing conformity, the acquisition of fact and political loyalty, over critical-thinking and analysis.

Enrollment targets were set by planners to serve to the needs of industry. Secondary and tertiary education, especially, were strongly influenced by industrial ministries, which determined enrollments and designed curricula. Vocational and technical programs were emphasized at the expense of more academic, flexible programs, and certain disciplines, particularly in the social sciences, were neglected, or ideologically biased. Employment was virtually guaranteed for all recent graduates, with Party affiliation more important than academic achievement for preferred jobs.

Education financing and delivery of education was highly centralized and inefficient. Resources were poorly allocated, with high teacher-student ratios, but large classes, and high spending levels, but poor upkeep and underuse of facilities. Teachers were poorly paid, under-trained and had few incentives to innovate and to improve the quality of their teaching.

The transition has led to significant and rapid changes to education systems. Political liberalization and deregulation have led to the dismantling of political control over the substance of education, allowing for more diversity and innovation in curricula, educational materials and teaching styles. Students now face increased choice in their selection of courses and the duration of their studies. Labor market adjustments have reinstated education as an important determinant of labor market success and earning potential. Changes in employer demand for labor market skills have influenced enrollment trends and have led countries to expand access to general secondary programs and university education.

Education systems in the region have been varied in their ability to respond to these new challenges. Declining access to pre-school and basic education in many countries is a troubling side effect of the fiscal crisis and the elimination of subsidies for education and child care. High levels of unemployment, especially among recent graduates and poorly educated workers illustrate the continued mismatch between the content of education provided in many schools, and the skills required for employment in a market economy. Similarly, the limited provision of adult education and retraining programs requires urgent attention, given the growing pool of displaced workers, many of whom are long-term unemployed.

On the financing side, despite severe fiscal crises, governments have protected or increased funds for education as a share of GDP. However, increased spending has not led to increased efficiency, or improvements in the quality of education. Inefficient resource allocation, including overstaffing of teachers, duplication of courses and schools, and underuse of facilities limit the ability of education systems to adapt to market conditions.

This paper investigates the impact of the transition on education by identifying emerging empirical trends in access, financing and delivery of education in nine countries of Central and Eastern Europe: Albania, Bulgaria, the Czech Republic, FYR Macedonia, Hungary, Poland, Romania, Slovakia and Slovenia. Section I examines changes in access to education, as measured by trends in enrollments across education levels. Section II discusses the links between labor market developments and the education sector, highlighting the impact of structural shifts in employment on education. Section III discusses the financing of education, describing changing financing mechanisms and trends in expenditures. Section IV analyzes the changing situation for teachers in the region and, Section V summarizes the main findings and proposes directions for further research.

Data Sources And Quality

Data for this study were collected as part of the Social Challenges of Transition (SCT) project which monitors developments in social policy and social welfare in CEE across six policy areas: education, health, earnings, labor markets, pensions and poverty/social assistance. Socioeconomic data were gathered for each sector, based upon initial hypotheses about the impact of transition on human resources.

For education, data were collected on access to and financing of education, as well as educational inputs. Data included (i) for access: enrollments by level of education, gender, and in public and private schools and universities; (ii) for expenditures: current and capital expenditures by level of education and category; and (iii) for inputs: teacher numbers and remuneration.

Because of the absence of comparable data, this study does not address a number of critically important issues, including educational outcomes and qualitative changes in the education sector. Few studies have attempted to capture cross-country trends in educational outcomes. The recently published Third International Mathematics and Science Study (TIMSS), compares achievement in math and science among eighth grade students and includes five SCT countries: the Czech Republic, Hungary, Romania, Slovakia and Slovenia.

Substantial qualitative changes have also occurred in curricula and teaching styles. Under the socialist regimes, education, like the rest of the economy, was centrally planned and politically controlled. Curricula, especially in the humanities and social sciences, were ideologically biased and censorship was common. Students were required to study Russian to reinforce political ties with the Soviet Union, while English language studies were discouraged. Political liberalization and decentralization of education systems has led to a rapid reversal of many of these conditions, although the breadth of such developments is extremely difficult to document empirically. In a similar vein, teaching methods have changed during the transition, but little evidence, other than anecdotal, is available.

Data were collected from a range of sources, including primary materials from the ministries of education and finance, and published sources from central statistical offices. Data on expenditures were particularly difficult to compile, due to decentralization across government ministries and between central and local-level statistical offices. Expenditures on vocational training were often dispersed throughout government ministries, as were expenditures by category of education. Enrollment figures for most countries were readily available from central statistical offices, or ministries of education.

Macroeconomic data, including GDP and public expenditures, were used for calculating descriptive indicators. Data were obtained from internal World Bank sources. While the figures used were the most current and reliable when this study was undertaken, exact numbers may be subject to change. During the transition, it has been common for CEE countries to revise and recalculate GDP and other macroeconomic variables. Revisions made between 1994 and 1995 accounted for less than 1 percent in all cases. Demographic data used for calculating enrollment rates were based on World Bank population projections.

Throughout this paper data from OECD member countries, as well as additional countries in Latin America and Asia are used for comparison. Countries were selected which had similar per capita GDP's as the CEE countries in this study.

I. Access and Participation

Under socialism, the countries of Central and Eastern Europe (CEE) were successful at providing high levels of access to education. Enrollment rates, especially those for pre-school and basic education equaled or exceeded those in Western European countries. Access to the system was relatively equitable, with girls enjoying similar opportunities as boys at all levels of education. However, the legacy of central planning distorted patterns of access to education, especially at the secondary and tertiary levels. The state perceived education as a means to a skilled and technically capable workforce. As a result, governments prioritized highly specialized vocational secondary courses at the expense of general secondary curricula and more flexible programs. In Romania, for example, nearly 96 percent of students in secondary education were enrolled in technical and vocational courses in 1989.

The emphasis on vocational and career-specific education programs limited access to tertiary education. Workers with vocational backgrounds were expected to enter directly into the workforce, rather than continue on to university. Higher education, therefore, was invariably the privilege of the political elite. The socialist systems neglected adult education and training, promoting full employment at the expense of productivity, and ignored career development and mid-career training and retraining.

The transition has already led to visible changes in access to education. Enrollments at the general secondary and university levels have grown in response to increasing demand. Political liberalization and the elimination of centralized control of curricula have led to more flexibility in educational programming and increased student choice in type and duration of studies. Increasing returns to education have reinforced the importance of secondary and post-secondary education, leading many students to prolong their studies. Recent evidence illustrates that education both increases the possibility of labor market success and earning potential, while decreasing the possibility that an individual will become unemployed or fall below the poverty line. With unemployment, and especially long-term unemployment, emerging as a major determinant of poverty in the region, the demand for further education has greatly expanded.

In contrast, preschool, some basic, and specialized vocational secondary enrollments have declined during the transition. Fiscal crises have threatened funding for education at the pre-school and basic levels, reducing subsidies, and devolving funding responsibilities to local governments and families, which often lack the necessary resources. Vocational enrollments have also declined in response to growing fiscal pressures, and decreasing demand for specialized training.

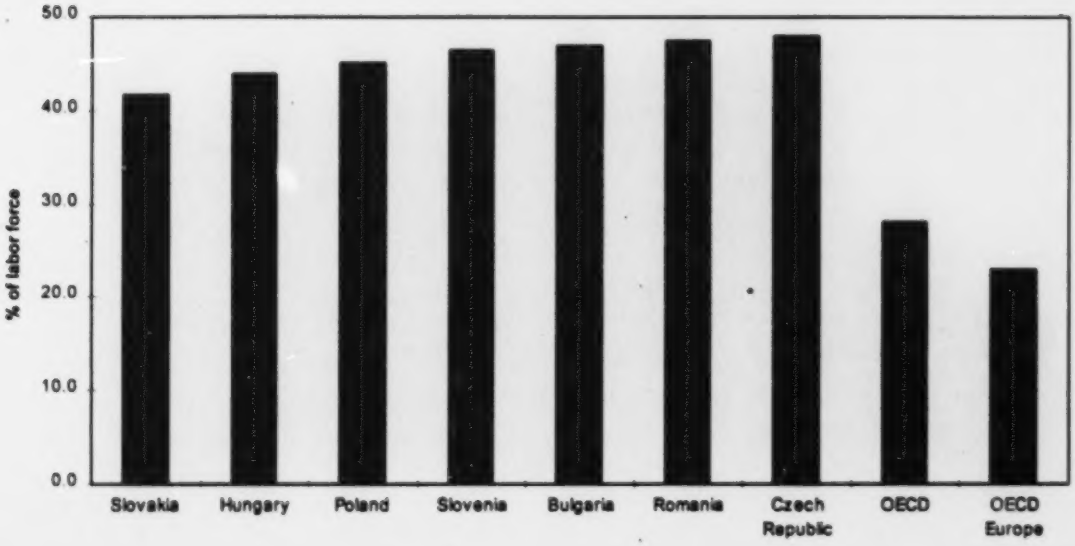
This section examines these trends in access and their antecedents. Access is measured by trends in gross enrollment ratios, the total number of students enrolled, regardless of age, as a percentage of the official age group for that level of education. While this method fails to distinguish between the number of places offered and the number of places demanded, it provides a broad overview of trends in access.

Pre-School Education

Pre-school education in CEE was a critical element of the social contract in the formerly planned economies. High levels of participation in pre-school education reflected not only the state's overall commitment to educating the workforce, but also a means of ensuring full labor force participation. Women, especially, were encouraged to work by access to pre-schools and day care centers located at the workplace. As a result, pre-schools served a child-care, as well as an educational function. In some cases, pre-school systems were maintained outside of the education ministries; in the former Czechslovakia the Ministry of Health administered pre-schools until 1990, and in FYR Macedonia the Ministry of Labor and Social Policy continues to oversee part of the preprimary education system. In 1993, the share of

women in the labor force was nearly 50 percent in most CEE countries, in contrast with 25 percent in the European OECD countries (Figure 1).

Figure 1: Female Share of the Labor Force (1993)

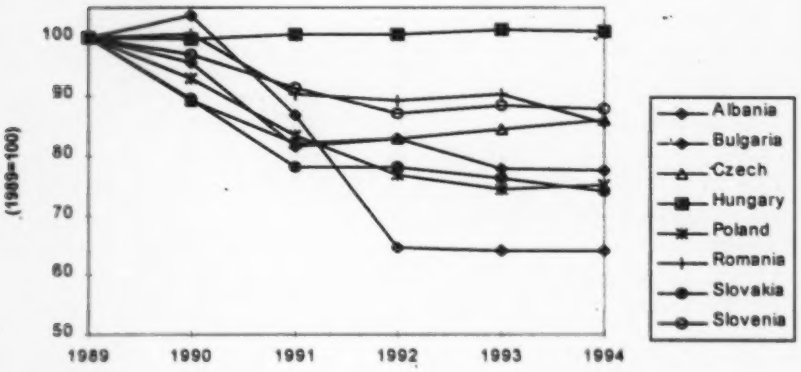


Since 1989, access to pre-school education has declined throughout the region in response to changes in female employment patterns and the fiscal crisis. Labor force participation dropped significantly in all CEE countries, but more for women than for men. Participation rates for women of prime working age[1] fell nearly 10 percentage points in Hungary, the Czech Republic and Slovenia between 1992 and 1995 (Allison and Ringold, 1996). This reflects, in large part, the impact of policy developments which have effected women's labor market choices, such as the erosion of child allowances, maternity benefits and access to pre-school education and child care. A study of women's labor force participation in the Czech Republic and Slovakia between 1984 and 1993 found that changes in cost and access to child care explain much of decline in women's labor force participation (Chase, 1995a).

Under socialism, access to pre-school education was high and was often provided in government subsidized schools and day care centers attached to large state-owned enterprises. Tightening budget constraints have led firms to cut benefits, including those for child-care and education. This trend has been compounded by the decentralization of fiscal responsibility for education. Local governments and families have assumed a growing share of financing for pre-school education, as ownership and administration of preschools have been transferred to municipalities, churches or the private sector. Parents have increasingly had to pay for school lunches, textbooks and other education materials that were previously subsidized by the state. For example, in 1989 in Czechoslovakia, parents only paid approximately 50 percent of the cost of meals for pre-school students. By 1993 Czech parents were accountable for up to 25 percent of the entire cost of schooling.

[1] Benerally between 25 years and the official retirement age.

Figure 2: Pre-School Enrollment Indices (1989-1994)

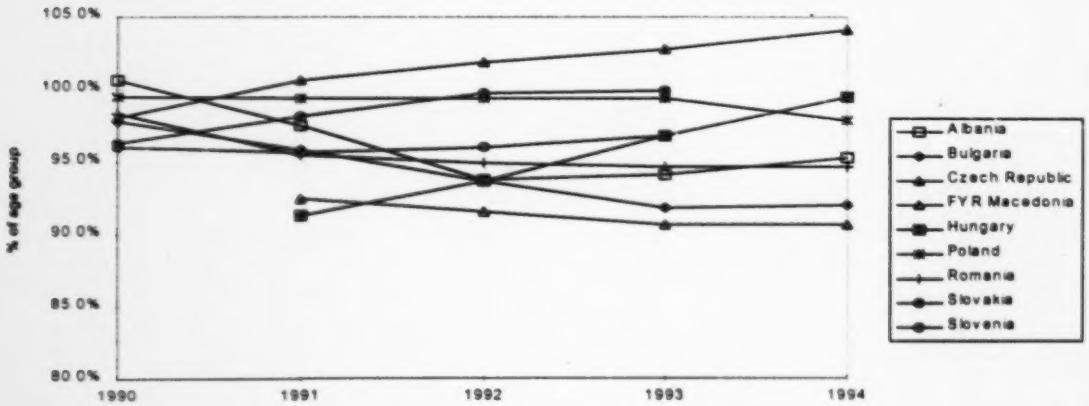


In the early stages of transition, access to pre-school was protected, with enrollments increasing slightly in Albania, and Romania (Figure 2). However, enrollments fell between 1991 and 1993, most notably in Albania, Slovakia and Poland. Enrollments in Hungary have been maintained throughout the transition, and have even grown slightly between 1991 and 1992. This is partially due to the fact that, in Hungary, responsibility for the financing of pre-school education was decentralized in the late 1980s, consequently, local governments were better prepared to adjust to increasing fiscal pressures at the outset of the transition.

Basic Education

Enrollment trends for basic education are very mixed, declining in some countries, and increasing slightly in others (Figure 3). During the socialist period, all of the countries covered in this study provided high levels of basic school enrollments, as basic education was considered an essential component of economic development and political socialization. Countries invested heavily in elementary schools during the early phases of postwar industrialization. In Albania, for example, before World War II, nearly 85 percent of the population was illiterate. However, following a concerted effort to provide universal access to basic education in the late 1940s and 1950s, literacy rates reached 80 percent.

Figure 3: Basic School Enrollment Rates (1990-1994)



Basic school enrollments were high at the outset of the transition, exceeding 90 percent in all countries. Enrollment rates have declined in Albania, Bulgaria, FYR Macedonia and Romania, countries where the socioeconomic costs of transition have been the highest, while stabilizing, or increasing slightly, in more rapidly reforming countries where growth has resumed, the Czech Republic, Hungary and Slovakia. The possible links between enrollment trends and the pace and sequencing of economic reforms require further investigation. Declines in enrollments have been largest in Albania and Bulgaria, where they fell 5-6 percentage points between 1990 and 1994. Gross enrollment rates have grown in the Czech Republic, Slovakia and Slovenia, exceeding 100 percent in some cases, with the enrollment of students older than those in the official age group. In contrast, enrollment rates in CEE appear low in comparison to Latin American and Asian countries at similar income levels. In 1992, gross enrollments in basic education were as high as 123 percent in Ecuador and 114 percent in Indonesia, countries where a higher proportion of over-age students are enrolled in basic education.

As with pre-school education, declining enrollment rates for basic education reflect rising costs of education for families. The elimination of subsidies for textbooks and other educational materials have deterred the poorest families from sending their children to school. In FYR Macedonia, the government planned to introduce a fine of 2,500 denars for families which fail to send their children to school (UNESCOa, 1995). Declining minority enrollments have been another source of basic school attrition, especially in countries with large Romany populations. Legislation on compulsory enrollments was eliminated at the outset of transition in a number of countries. A recent UNDP report on Bulgaria estimates that somewhere between 40 and 70 percent of Romany children do not attend school (UNDP, 1995).

Increases in basic school enrollments are a likely effect of the growing importance of education in labor market outcomes. High rates of unemployment among young people, and especially those with basic school education only, have encouraged students to prolong their education. As is the case throughout the OECD, unemployment among those with basic education only is higher than for all other age groups, reaching 30 percent in Bulgaria and Slovakia, and exceeding 16 percent in Hungary and Poland. The rapid escalation of severe youth unemployment has led many students to continue their education and delay workforce entry. Greater access to higher education and growing flexibility and choice in course selection have also encouraged students to stay in education.

Secondary Education

Trends in secondary education are closely linked to labor market developments. Enrollments in general secondary programs leading to university have increased, while enrollments in specialized vocational and technical training programs have declined (Table 1). Secondary education was a core element of the socialist educational program. Most countries maintained three types of secondary education: i) *4-5 year general secondary programs*, providing a general 'gymnasium'-type of education leading to university entrance examinations; ii) *4-5 year technical secondary programs*, incorporating the basic elements of the general secondary curriculum in addition to more specialized vocational training; and iii) *1-3 year vocational/technical programs*, providing vocational training and often apprenticeships leading to a specific trade. The latter were often sponsored by enterprises, which provided specialized training to future employees. As a result of the restructuring of many large state-owned industries and the rapidly changing demand for skills, many of these schools have been closed.

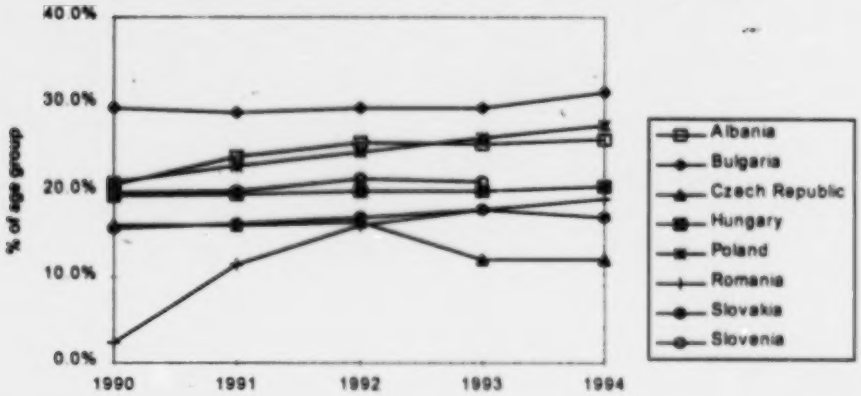
Table 1: Secondary Enrollments by Type

	1990	1991	1992	1993	1994
Albania					
total enrollment rate	54.1	43.7	38.1	29.0	32.6
% enrolled in general programs	38.2	54.9	67.1	87.8	79.5
% enrolled in technical (4-5 year programs)	61.8	45.1	32.9	12.2	20.5
Bulgaria					
total enrollment rate	76.2	74.3	72.8	71.6	73.9
% enrolled in general programs	39.5	38.7	38.9	40.5	41.4
% enrolled in technical (4-5 year programs)	31.9	31.5	29.5	28.1	29.8
% enrolled in vocational (1-3 year programs)	26.5	29.4	29.6	29.9	30.5
Czech Republic					
total enrollment rate	83.9	80.6	81.5	82.3	89.5
% enrolled in general programs	17.6	19.1	19.8	20.0	15.0
% enrolled in technical (4-5 year programs)	28.8	31.3	33.8	40.1	42.8
% enrolled in vocational (1-3 year programs)	54.5	52.1	48.9	46.2	44.9
Hungary					
total enrollment rate	80.5	79.9	78.4	76.7	77.1
% enrolled in general programs	23.9	24.1	24.7	25.9	26.6
% enrolled in technical (4-5 year programs)	32.7	33.6	34.7	36.1	37.3
% enrolled in vocational (1-3 year programs)	43.9	43.2	41.7	39.4	37.3
FYR Macedonia					
total enrollment rate	53.9	52.5	51.4	50.3	51.0
Poland					
total enrollment rate	--	57.4	60.4	64.6	67.6
% enrolled in general programs	--	--	40.5	41.7	41.7
% enrolled in technical (4-5 year programs)	--	59.5	58.3	58.3	56.7
% enrolled in vocational (1-3 year programs)	--	--	58.3	53.0	47.2
Romania					
total enrollment rate	108.1	88.9	74.1	66.8	66.0
% enrolled in general programs	3.5	2.1	12.8	21.6	26.5
% enrolled in technical (4-5 year programs)	79.2	60.3	45.9	41.6	41.6
% enrolled in vocational (1-3 year programs)	19.8	18.7	26.9	32.5	31.8
Slovakia					
total enrollment rate	81.8	81.4	82.9	85.5	--
% enrolled in general programs	17.9	19.0	20.1	21.3	22.2
% enrolled in technical (4-5 year programs)	29.8	31.9	33.7	34.8	--
% enrolled in vocational (1-3 year programs)	54.0	51.2	47.9	45.1	43.0
Slovenia					
total enrollment rate	80.9	81.3	80.9	81.3	--
% enrolled in general programs	22.5	24.4	24.5	26.4	25.9
% enrolled in technical (4-5 year programs)	31.7	31.0	33.9	35.6	--
% enrolled in vocational (1-3 year programs)	48.4	43.9	44.5	39.8	38.5

i) General Secondary

From the beginning of the transition, the proportion of students enrolled in general secondary programs has increased everywhere except the Czech Republic (Figure 4). Throughout the region, there has been a renewed preference for more flexible general secondary programs. Trends in labor market outcomes indicate that individuals with general, academic backgrounds have been better able to adapt to rapid changes in demand for skills in the labor market than those with more specialized, vocational training. Expansion of general secondary education also reflects the increased importance of higher education. Unlike many 1-3 year vocational programs, general secondary programs allow students to apply for university admission.

Figure 4: General Secondary Enrollment Rates (1990-1994)



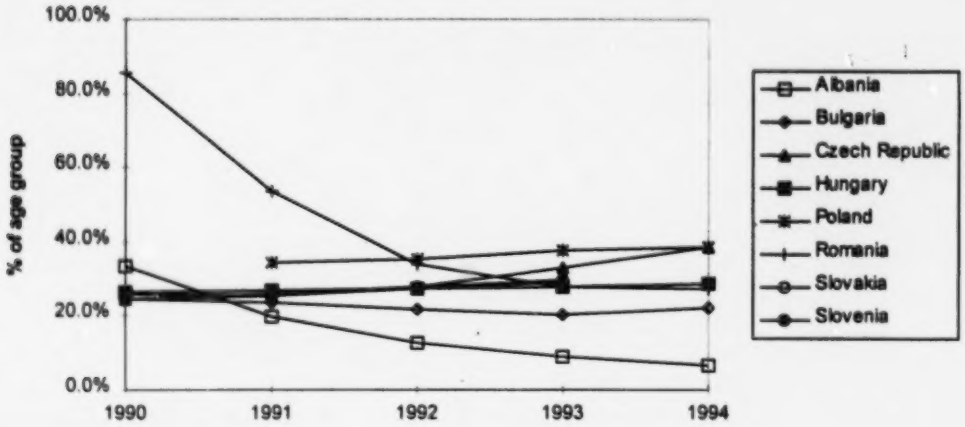
The most dramatic jump in general secondary enrollment rates occurred in Romania, where enrollments increased from 4 percent in 1990 to 19 percent in 1994. Increases in the other countries range from 1 percent in Bulgaria to 8 percent in Poland (Figure 4). The Romanian case reflects a general shift from 4-5 year technical courses, advocated by the previous regime, to general secondary programs. In Romania and the other countries, technical education was prized by the socialist regimes as a means to a technically capable workforce. The slight decrease in general secondary enrollments in the Czech Republic represents the growing emphasis in that country on vocational schools, in many cases sponsored by private firms.

In order to meet the growing demand, many countries have converted vocational programs and schools, to general secondary education. In 1990, Albania had 47 general secondary schools with 55,000 students; by 1995 there were 364 schools and 68,000 students. Conversely, vocational secondary education declined from 308 schools with 89,000 students in 1990, to 45 schools with 16,000 students in 1995. Similar trends occurred in Hungary and notably Romania, which went from 95 general secondary schools in 1989 to 435 in 1994. The opening of private schools has also accommodated the demand for general secondary education. While no private schools existed at the outset of transition, by 1994 there were 73 private general secondary schools in Romania, 77 in Hungary and 93 in Slovakia.

ii) Technical Secondary (4-5 year programs)

Enrollments in technical secondary education have been influenced by changes in the demand for labor force skills and the increasing demand for higher education. Trends in enrollments in 4-5 year technical schools have been mixed, partially due to data discrepancies, changes in the names of schools (which may confuse types of vocational education), and country differences. In Hungary and Poland, where unemployment among graduates of 1-3 year vocational/technical schools is high, there have been marked increases in enrollments in 4-5 year programs, which provide a broader-based curriculum and allow participants to continue on to tertiary education (Figure 5).

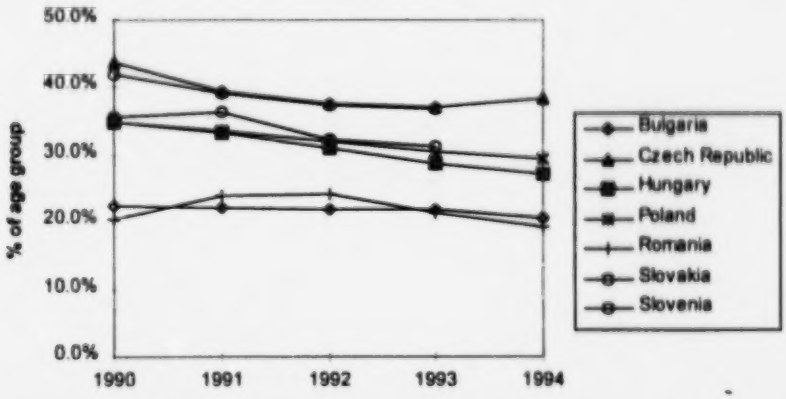
Figure 5: Technical Secondary Enrollments - 4-5 year programs (1990-1994)



The most significant increase in technical secondary enrollment rates has been in the Czech Republic, where enrollments rose from 24 percent in 1990 to 40 percent in 1994. This is a result of a traditional preference in the Czech Republic for enterprise-supported vocational training, along the German model. In 1990, policy changes shifted financing responsibility for vocational schools to employers. The number of vocational schools in the Czech Republic grew from 644 in 1989 to 729 in 1993. Private vocational schools have also proliferated in the Czech Republic, with 294 in existence by 1994. As previously mentioned, there has been a significant shift away from 4-5 year technical secondary programs in Romania, where enrollments plummeted from 86 percent in 1990 to 28 percent in 1994.

iii) Vocational Secondary (1-3 year programs)

Figure 6: Vocational Secondary Enrollments - 1-3 year programs (1990-1994)



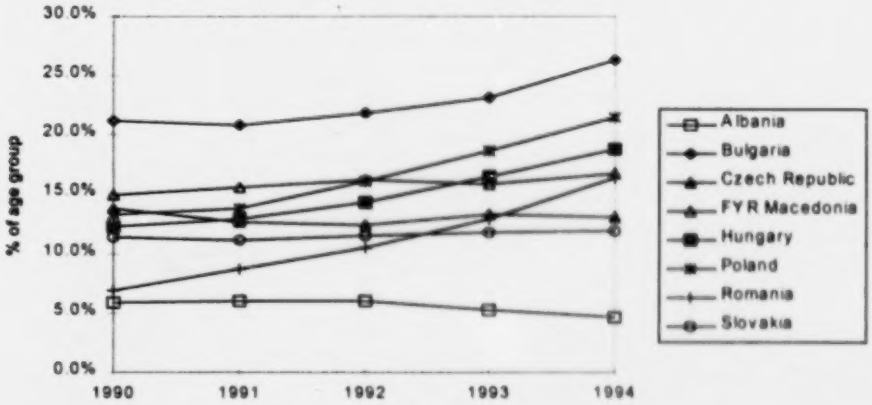
Enrollments in specialized 1-3 year apprentice schools have declined across the region (Figure 6). Between 1990 and 1994 enrollments fell 8 percentage points in Hungary, and between 5 and 6 percentage points in the Czech Republic, Poland and Slovenia. Prior to the transition many specialized vocational and technical schools were attached to enterprises and administered directly by government ministries. Vocational schools provided narrow training for specific industries and occupations. The Polish system offered nearly 250 different occupational courses. With the restructuring and closure of

many large state owned enterprises, many vocational schools have closed. Demand has shifted, as changing employment structures have left many vocational school graduates with outdated training unemployed. Unemployment rates among graduates of apprentice schools are higher than those for other levels of secondary education.

Higher Education

Increased participation in higher education has been one of the most remarkable achievements of transition in CEE. Throughout the region, the transition has favored university graduates, creating new incentives for students to prolong their education. Evidence indicates that the university educated are much less likely to be poor and unemployed than others. In Romania, an individual with a college education is 50 times less likely to be poor, than someone with little schooling (WDR, 1996). Higher education has emerged as an important determinant of labor market status. Throughout the region, unemployment rates are lowest for the university educated, remaining under 5 percent in the Czech Republic, Hungary, Poland and Slovakia. In addition, growing wage differentials have increased returns to higher education. Improved selection and availability of courses and programs have also stimulated demand for higher education. Prior to the transition, enrollments were programmed to fit the requirements of industry, emphasizing training in engineering and the physical sciences over the humanities and social sciences. Political liberalization and deregulation have increased the autonomy of universities, allowing them greater flexibility in designing curricula and programs of study.

Figure 7: Higher Education Enrollment Rates (1990-1994)



Expansion of access to higher education has been a priority on the reform agenda for governments in CEE. Policymakers have acknowledged the role of universities in providing the intellectual and professional leadership and skills needed in a market economy. As a result, there has been a concerted effort by governments to pursue reforms of higher education and provide access similar to that in Western Europe. In the early years of transition, Hungary established the "Catching up with European Higher Education Fund" in order to increase enrollments and diversify programming in higher education. Enrollment rates for tertiary education grew in Poland from 19 percent in 1990 to 26 percent in 1994 and in Romania from 7 to 19 percent (Figure 7). In the Romanian case, this is due to significant expansion of private enrollments. Since 1989, 73 private institutions of higher education have been established which now account for nearly 27 percent of total enrollments. Enrollment rates declined slightly in the Czech Republic but remain relatively high at 18 percent. In Albania, full-time enrollment rates for university students declined from 6 to 5 percent, but this figure masks the significant increase in part-time enrollments.

II. Education and the Labor Market

Increasingly, transition has underscored the importance of education as a determinant of labor market status and success. Under central planning, educational background had little bearing on employment prospects or earnings potential, with access to privileged positions more likely determined by Party affiliation and connections than merit. Labor market conditions provided few incentives for individuals to prolong their education beyond the secondary level. Full employment was virtually guaranteed from the time a new graduate entered the labor market, through to retirement, and wages were highly compressed and set by the central government.

Recent trends in employment and earnings illustrate that labor markets have been rapidly adjusting to new market conditions, and new incentive structures are emerging. Employment and labor force participation have fallen dramatically, and unemployment has escalated from near-zero levels. Workers with limited and outdated educational backgrounds are far more likely to become unemployed, and consequently poor, than those with higher education and the skills and expertise needed in a market economy. Similarly, wage structures have adjusted quickly throughout the region, such that the earnings distribution in many CEE countries resembles that in many medium-inequality OECD countries.

Labor market adjustments have begun to influence the reform agenda for education and training systems, however governments face daunting challenges. Prior to 1989, education was highly planned and politically controlled, as the structure and curricula were oriented toward the production goals and political ideology of the socialist regimes. Industrial ministries were directly involved in designing curricula and determining enrollment needs. Changes in ownership, technology and the orientation of trade have increased demand for certain skills and rendered other types of training obsolete. Governments have begun to respond to these challenges by expanding access to higher education, and moving from vocational to general secondary education. However, adjustments are still required to meet new demands, including further curriculum changes and teacher training. In addition, retraining of existing workers and adult education require urgent attention.

This section examines recent labor market developments in relation to education. Employment shifts and unemployment trends highlight the growing importance of education. There is evidence that students have been responding to these trends in their choice of studies, and university enrollments have become increasingly driven by labor force demand. Finally, the section briefly discusses the consequences for the existing workforce.

Labor Market Adjustments

Changing employment patterns reveal a significant mismatch between the skills demanded in the emerging market economies, and the skills of the existing workforce. As trading alliances, such as the Council for Mutual Economic Assistance (CMEA), dissolved and industries became obsolete overnight, many workers, trained for jobs in the socialist economies, suddenly faced bleak employment prospects. Large-scale declines in public sector employment, and shifts between employment sectors were rooted in the output collapse which accompanied the initial macoreconomic reforms. Stabilization-related shocks eroded industrial production and necessitated fundamental restructuring of state owned enterprises. The fiscal crisis eliminated government subsidies of industry, removing the "soft budget constraints" which protected many unproductive enterprises under central planning (Kornai, 1992). These developments have forced the closure of unproductive and outdated firms, with employment losses especially in heavy industry and manufacturing. Agriculture was similarly effected, as large collective farms with antiquated machinery became uncompetitive in the new economic environment (Table 2).

Conversely, the transition has sparked growth in sectors which were underdeveloped under socialism. There have been marked increases in employment in areas where the private sector has grown rapidly. In particular, the service sector has expanded, with growth especially in trade and catering, and financial services and real estate. Private sector growth, increased trade with the West, and the demand for updated technology have increased the need for workers with expertise in fields such as business, language and information technology.

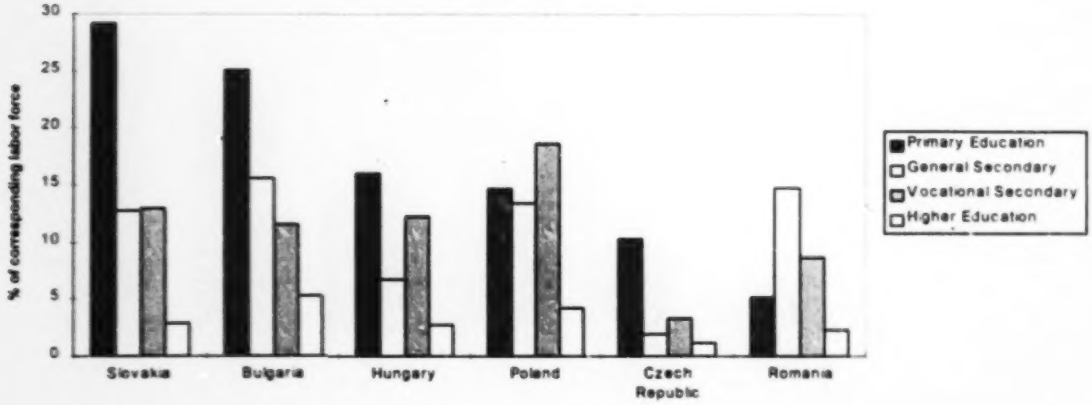
Table 2: Employment Changes (1991-1995)

(% change)	Czech Republic[a]	Hungary[b]	Poland[b]	Slovakia[a]
Declining share of employment				
Agriculture	-5.5	-3.5	-7.9	-4.2
Manufacturing	-6.0	-2.5	-1.2	-8.1
Increasing share of employment				
Trade and catering	7.8	1.1	6.7	5.1
Financial services and real estate	1.2	2.4	2.3	0.3
Public administration	3.3	2.5	--	3.7

[a] 1991-1995
[b] 1992-1995

Restructuring led to rapid increases in unemployment throughout Central and Eastern Europe. Prior to the transition, open unemployment in the region was almost nonexistent. Labor hoarding was widespread, as central planning provided limited incentives for firms to allocate labor efficiently. The situation reversed dramatically during the transition, as firms closed, or let workers go through early retirement programs, or redundancies. Between 1990 and 1993, following the output collapse, registered unemployment grew in all countries, exceeding 16 percent in Bulgaria and Poland, and climbing to between 12 and 14 percent in Hungary, Slovakia and Slovenia. In contrast with the other countries, unemployment rates in the Czech Republic have remained low, between 3 and 4 percent, throughout the transition (Allison and Ringold, 1996).

Figure 8: Unemployment and Education (1995)



Emerging unemployment patterns are linked to experience and educational attainment. Unemployment for young people, between 15 and 25, is higher than for any other age group, illustrating the difficulty recent secondary school graduates have had finding jobs. Workers with only vocational secondary or primary backgrounds have higher unemployment rates than graduates of general secondary schools, or university education (Figure 10). In Slovakia unemployment among individuals with only

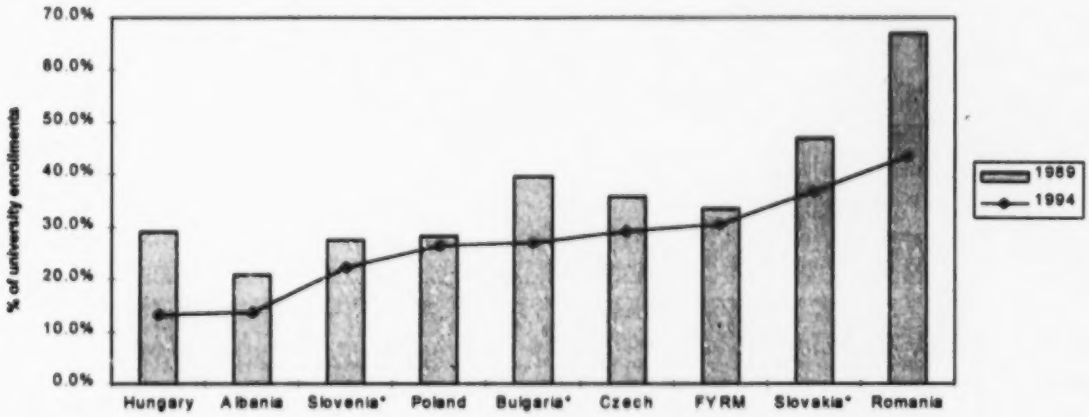
primary school education exceeded 30 percent in 1995. In Poland, graduates of vocational, 'apprentice-type' schools have unemployment rates higher than those of any other level of education. As is the case in OECD countries, unemployment rates for the university educated are lower than for all other education levels and the national average.

Trends in earnings have developed along similar lines. After decades of wage compression, many of the countries of Central and Eastern Europe now have earnings distributions similar to those in OECD countries with mid-level inequality. A recent study for Poland found inequality to be similar to that of Canada, Australia and France (Rutkowski, 1996b). Income status has become closely linked to educational attainment. In the Czech Republic and Poland, the earnings differential between university educated workers and those with vocational education more than doubled for men between 1990 and 1993 (Rutkowski, 1996a). In the Czech Republic and Slovakia there is evidence that returns to education diverged across types of secondary education. Prior to the transition, earnings for secondary technical education were higher than those for general secondary education, but by 1993 the situation was reversed (Chase, 1995b).

Changes in University Enrollments

While high unemployment rates among recent school graduates demonstrate the low external efficiency of education and training systems in the region, there are indications of changes. Students have responded to labor market developments in their choices of type and duration of studies. Within higher education, enrollments have become increasingly driven by labor market demand. Prior to transition, education and training systems prepared large numbers of students for jobs in heavy industry and agriculture through specialized vocational training and apprenticeships. The reduction in demand for workers with skills in manufacturing, engineering and mining, and high rates of unemployment for students with vocational training have dissuaded students from enrolling in vocational secondary education and choosing engineering courses at the university level. On the other hand, there has been marked growth in the social sciences and humanities.

Figure 9: Enrollments in Engineering Programs (1989-1994)



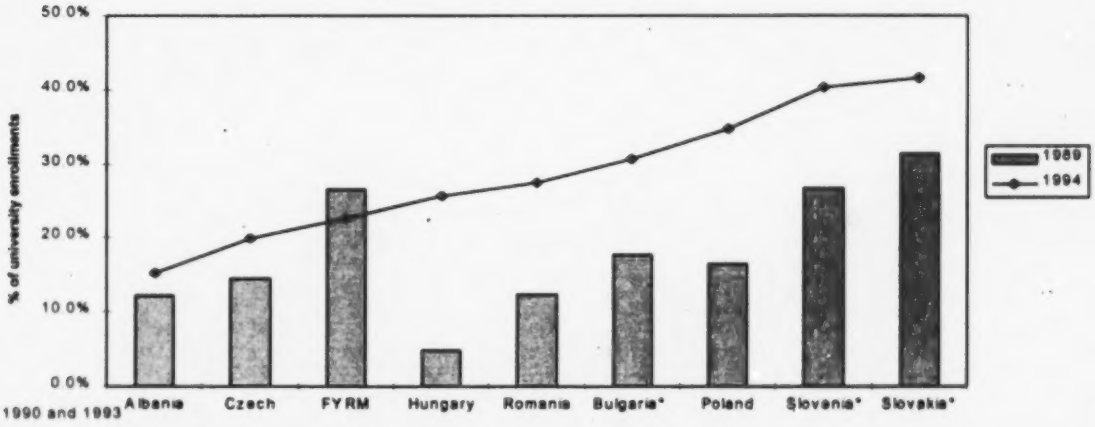
* 1989 and 1993

University education prior to the transition was highly biased toward programs in engineering and the physical sciences, with ministries of science and industry often setting enrollment quotas. The impact of transition on enrollments in these areas has been striking. Deregulation and increased autonomy of universities have made higher education more sensitive to student choice and labor market

developments, rather than the dictates of central planning. Romania provides the starkest example of this trend. In 1989, over two-thirds of all students in tertiary education were enrolled in engineering and science programs, declining to one-third by 1994 (Figure 9). Although not as dramatic as the Romanian case, engineering enrollments have declined in all other countries. The shift away from engineering and sciences has brought the CEE countries closer to 20-30 percent, the level found in Latin American and Asian countries at similar income levels (Annex Table 9).

In contrast, enrollments in the social sciences have grown since the onset of the transition. The social sciences, including economics, law, psychology and history were neglected under socialism. Programs that did exist were often distorted by political ideology, yielding low student demand and interest. This gap in available skills and training has been an obstacle during the transition, which has required the skills of individuals with training in management, accounting, economics and law. In 1989, levels of social science enrollments in CEE ranged from 12 percent in Albania and Romania, to roughly 30 percent in Slovakia and FYR Macedonia (Figure 10). This is significantly lower than in the Latin American and Asian countries, where social science enrollments comprised nearly half of total university students (Annex Table 10). Enrollments have been steadily increasing since 1989, now exceeding 40 percent in Slovakia and Slovenia. FYR Macedonia is an exception, where, contrary to the trend, social science enrollments have decreased. Similarly, enrollments in the humanities have grown in most countries since 1989.

Figure 10: Enrollments in Social Science Programs (1989-1994)



The data on enrollments reflect a rapid turnaround in participation in higher education programs, but provide limited information on systemic adjustments. It is unclear to what extent teachers and curricula have adapted and adjusted the quality and substantive focus of courses to meet the changing demands. Further research is necessary to address these questions and to determine the extent to which countries have been able to accommodate student needs.

Adult Education and Training

One of the greatest obstacles facing the countries in transition is the challenge of the existing workforce. Structural economic shifts have created a large pool of displaced workers, unemployed who have little expectation of returning to work their prior fields, and have no prospects for employment in other areas. Many of these workers participated in vocational and technical education programs, and were prepared to work in industries which have been significantly restructured. Large numbers of displaced workers have exited the labor force through disability or early retirement programs. Under the

socialist system, career changes were discouraged and extremely rare. As a result the CEE countries lack programs for adult education and retraining to address the skill deficiencies of displaced workers.

The related challenge of long-term unemployment has also highlighted the need for adult education and specialized mid-career training. Long-term unemployment is increasingly correlated with poverty, and has thus been one of the most serious outcomes of transition in CEE. The share of unemployed who have been out of work for longer than one year has been climbing steadily throughout the region. Evidence illustrates that the majority of the long-term unemployed are of prime working age, between age 25 and retirement.

During the transition, some countries have adopted active employment programs to prepare workers for positions in other fields. Hungary and Poland have introduced programs to provide the unemployed with training in areas where skill shortages exist (O'Leary, 1996). Continuing education for adults remains weak throughout the region. As labor markets become more dynamic, and it becomes more common for workers to change jobs or careers during their working life, adult education and training will grow increasingly important. Such training can be a joint venture of both public and private sectors. In Hungary and Romania, national and regional training boards have been established to fund and coordinate funding by public and private institutions (Laporte and Schweitzer, 1994).

III. Education Financing

Fundamental changes in the structure of the economies of Central and Eastern Europe have challenged the nature of state involvement in the provision and financing of education in CEE. With few exceptions, education systems prior to transition were almost exclusively financed by central governments out of tax revenues. Financing responsibilities were largely assumed by ministries of education, with other ministries involved in certain areas; ministries of industry, communication and transportation financed various streams of vocational education, and ministries of health were responsible for medical education, and some early childhood education programs. During the socialist period, all of the countries in the region succeeded in establishing extensive and relatively equitable education and training systems. However, these accomplishments came at the expense of efficiency in resource allocation and use. At the outset of transition, with stagnating investment levels and growing fiscal pressures, maintaining equity and quality in education has proven increasingly difficult.

The fiscal crisis which accompanied liberalization further burdened education budgets and threatened the abilities of CEE countries to maintain pre-transition spending levels. Countries have adopted a variety of policy responses to adapt education budgets to changing economic constraints: i) a range of non-public educational options have emerged including purely private and partially subsidized schools; ii) responsibility for financing has been increasingly decentralized, with local governments and families playing a greater role in generating resources; and iii) through the adoption of alternative funding arrangements schools and universities have experimented with new options for cost recovery and financing for academic research.

This section first discusses trends in education expenditures, and then briefly describes changes in financing methods which various countries have employed in order to cope with the stress of economic contraction. Spending patterns vary significantly across the region, but general trends have emerged. In all of the countries education expenditures declined in real terms, alongside economic contraction. However, governments have protected education expenditure during the fiscal crisis. As a share of GDP, spending has increased, and has become equal to, or, in some cases, higher than spending in OECD countries at much higher income levels.

Expenditures discussed in this section refer to public expenditures. While private education is growing in the region, data are scant and difficult to collect. For a number of countries, it was possible to obtain data on public subsidies to private education.[1] Likewise, OECD figures, except where indicated, refer to the public sector.

Education Expenditures and GDP

The fiscal crisis which accompanied the transition burdened already strained education budgets. Despite these pressures, countries have maintained the share of funding for education during the transition, although expenditures have fluctuated widely. With the exception of Albania[2], expenditures on education as a share of GDP increased throughout CEE between 1989 and 1994 (Figure 11). Expenditures grew the most in Hungary, expanding from 4 percent of GDP in 1989, to nearly 7 percent in 1994. During the same time period, expenditures grew approximately 1 percent in FYR Macedonia, Bulgaria, the Czech Republic, Poland and Romania.

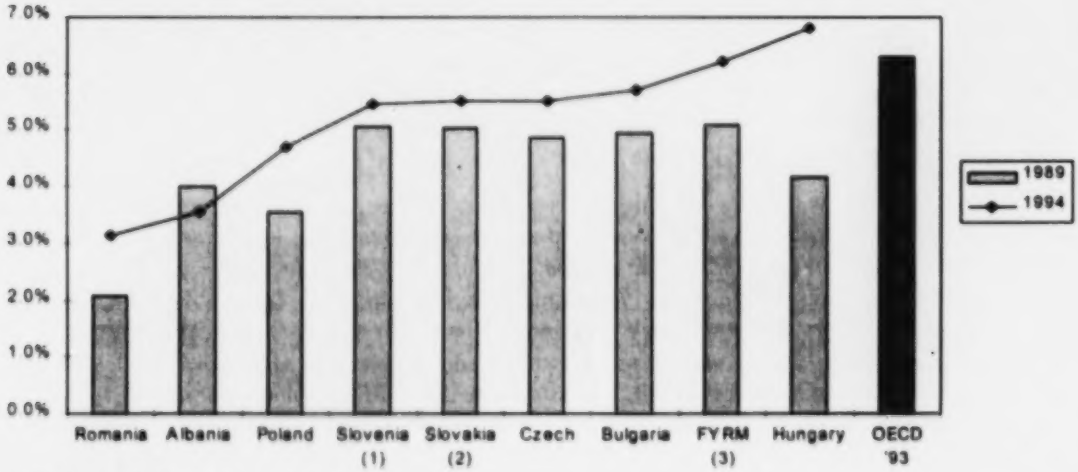
---

[1] These data are included in total expenditures for Poland (1991-94), the Czech Republic (1992-94), and Slovenia, (1993-94).

[2] Recent data obtained prior to publication indicated that spending in Albania in 1995 returned to the 1989 level.

Spending in the majority of countries has exceeded, or is approaching the OECD mean. In 1993, public expenditures comprised 5.3 percent of GDP in the OECD. Total spending on education, including private expenditures, and public subsidies to households was 6.3 percent. Public expenditures in Hungary, FYR Macedonia, Bulgaria and the Czech Republic have reached, or surpassed 6 percent. Romania began the transition with strikingly low levels of investment, at 2 percent of GDP, and remain low, increasing to 3 percent in 1994.

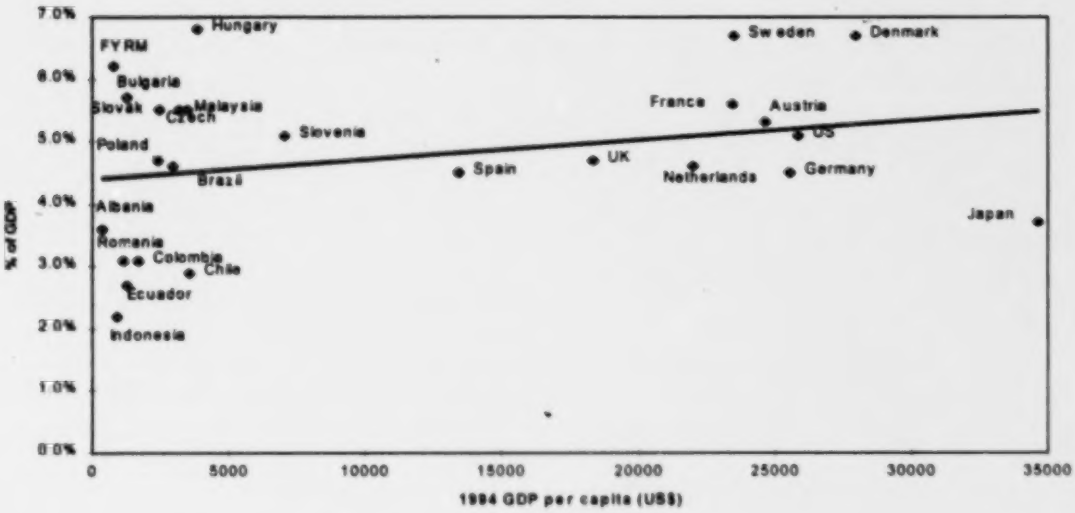
Figure 11: Education Expenditures and GDP, (1989 and 1994)



1) '92 and '94; (2) '89 and '93; (3) '90 and '94

Cross-national comparisons of aggregate spending on education, mask important differences between countries, such as enrollment rates, demographic factors, and the overall size of the economy (OECD, 1996a), but do provide overall country contrasts. Analysis of public spending in relation to per capita income shows that public expenditures on education in many of the CEE countries are comparable to OECD countries at much higher income levels (Figure 12). At the upper end of the scale, spending on education in Hungary in 1994 was 7 percent, roughly equal to that of Sweden in 1993, a country with a per capita GDP six times greater. Total education expenditures, including private spending, reached 8 percent in Sweden. Expenditures in FYR Macedonia, Bulgaria and Slovakia correspond with expenditures in mid-range OECD countries such as France, Austria and the United States. Public spending in Romania, the lowest in CEE, was level to that of Columbia and Chile, countries at similar income levels.

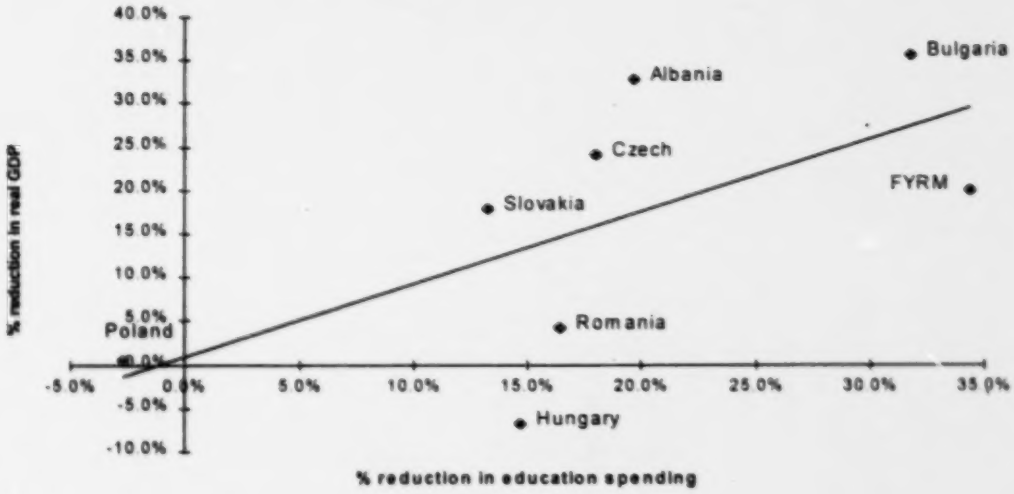
Figure 12: Public Education Expenditures and GDP per capita (1994)



Real Spending on Education

Despite relative increases in the share of GDP devoted to education, spending in the region has declined in real terms. In general, trends in education expenditures have followed the trajectories of economic contraction, declining alongside the output collapse. In a number of countries, real education expenditures have begun to grow with the resumption in output. Real education expenditures turned positive with real GDP increase in Poland in 1991, Romania in 1992 and the Czech Republic and Albania in 1993.

Figure 13: Reduction in Real Public Spending for Education (1990-1994)



Overall, however, real education expenditures remain below pre-transition levels. Between 1990 and 1994, the decline in real expenditures ranged from as much as 36 percent in Bulgaria, to 1 percent in

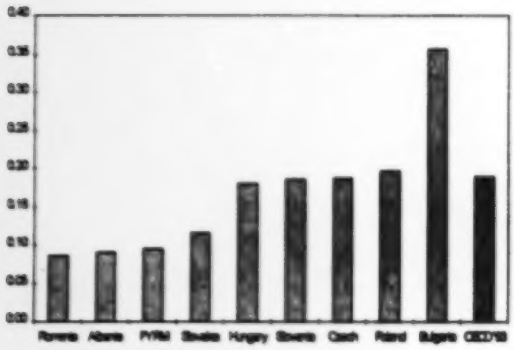
Poland, with most countries experiencing a decline of between 20 and 30 percent. Hungary is an exception, where real expenditures increased by nearly 7 percent between 1990 and 1994. The decline in real expenditures devoted to education is correlated with the fall in real GDP (Figure 13). In Bulgaria, the 32 percent decline in real GDP was matched by a nearly 36 percent drop in education expenditures. The fall in real spending on education in FYR Macedonia was similarly large, at 20 percent, in line with a 34 percent drop in real GDP. Poland represents the other extreme, with GDP growth resuming to 3 percent -- following two years of severe decline -- and education spending falling less than 1 percent between 1990 and 1994. In Romania, the output collapse between 1990 and 1994 was lower than in many countries, due to limited public sector restructuring, although the fall in real education spending was large, at 16 percent.

Education per Student and GDP per Capita

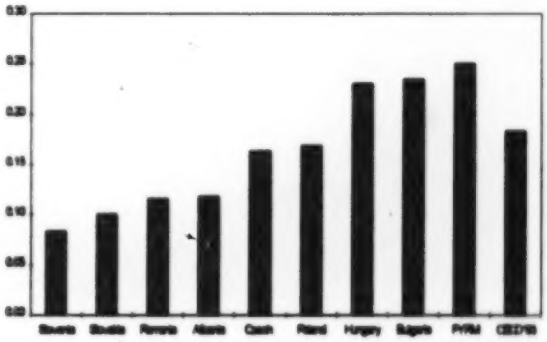
An analysis of the relationship between per student spending by education level and per capita GDP reveals considerable variation in spending patterns across the countries, and across education levels. This ratio illustrates the link between available resources and education expenditures. As is the case throughout the OECD, the cost of education per student rises with education level. In general, spending ratios for pre-school education are low, or consistent, with the OECD mean, and are somewhat higher in the CEE countries for the other levels of education. It is important to note that the OECD figures incorporate both public and private spending (Figure 14).

Figures 14: Per Pupil Spending Relative to GDP Per Capita (in nominal terms), 1994*

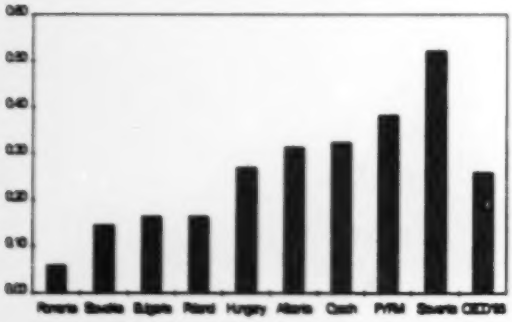
Pre-school



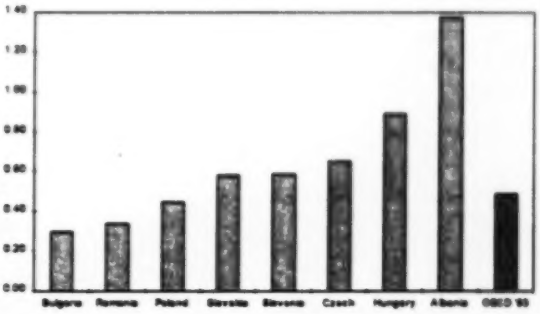
Basic



Secondary



University



* Data for Hungary, Slovakia and Slovenia are 1993.

At the pre-school level, Bulgaria is the outlier, with a ratio of 0.35, far higher than the other CEE countries which cluster around and below the OECD average of 0.19. Spending in Romania, Albania and FYR Macedonia is low at around 0.10, all countries which have experienced recent downturns in pre-school enrollment levels.

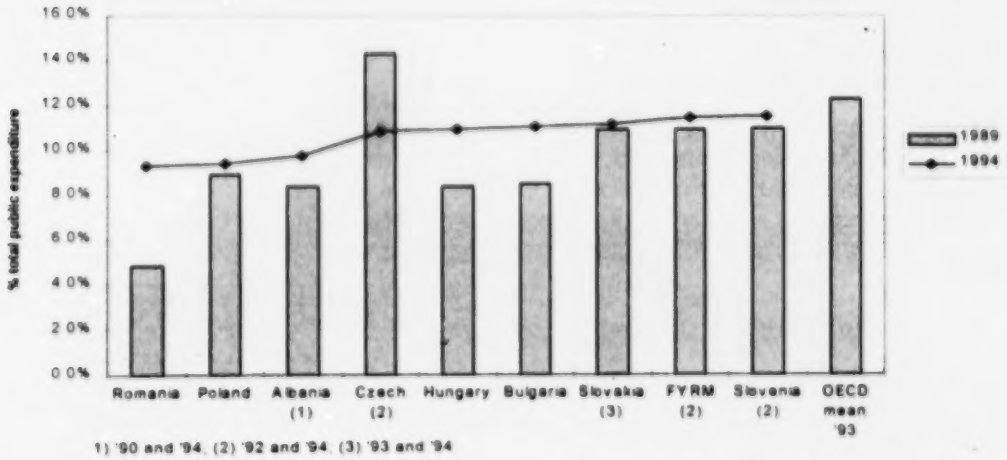
Spending ratios for basic education are high and exceed the OECD average in FYR Macedonia, Hungary and Bulgaria, countries where overall expenditures on education are also the highest. The connection between spending levels and enrollments does not hold for basic education. While Romania and Albania, countries where basic enrollments have declined, are spending the least per pupil, spending is highest in FYR Macedonia and Bulgaria, countries where basic school enrollments have eroded in recent years.

Ratios for secondary and university education vary the most across countries. For secondary education, expenditures far exceed the OECD average in Slovenia and FYR Macedonia, where secondary enrollments have remained relatively stable and overall spending is high. As might be expected, the ratio for secondary education is exceptionally low in Romania, where enrollments in secondary education have fallen markedly, and spending on education as a share of GDP is the lowest in the region. At the university level, the expenditure ratio is highest in Albania, the only country where enrollment rates and education expenditures as a share of GDP have declined during the transition.

Education as a Share of Public Expenditures

As a share of total public expenditures, spending on education has increased in most countries, illustrating that, relative to other sectors, education has been protected during the transition. Expenditures as a share of total public expenditures grew most notably in Bulgaria, where they increased from 9 percent in 1989 to 11 percent in 1994, and Hungary, where they expanded from 8 percent to 11 percent (Figure 15). By 1994, most countries clustered around the OECD average of 11 percent. The exception is the Czech Republic where, contrary to the trend, education spending as a share of total expenditures declined from 14 to 11 percent between 1992 and 1994.

Figure 15: Education Expenditures and Total Public Expenditures (1989 and 1994)

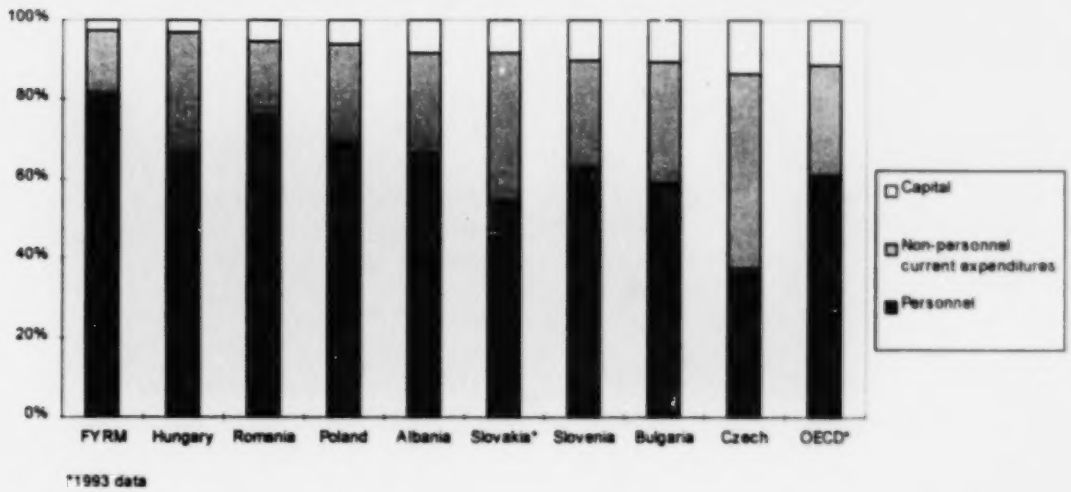


Expenditures by Category

In addition to fluctuations in the level of spending on education, the allocation of funding across categories has shifted during transition. Expenditure data for this study was disagreggated into categories: personnel (wages and benefits), books and materials, student welfare and utilities and maintenance. Subsidies to private education were also examined in attempt to document public support to an emerging private sector. Data collection for all categories was particularly difficult, often involving extensive field work and effort to disaggregate and classify data according to category. Despite thorough reworking, definitional differences persist and limit data comparability.

Recurrent costs comprise the majority of education expenditures. Capital investment in education in CEE is, on average, lower than in the OECD (Figure 16). In 1994, investment expenditures were particularly low in FYR Macedonia and Romania, where they ranged between 2 and 5 percent, less than half the OECD rate of 11 percent. This has serious implications for the capacity of these countries to utilize existing facilities for education. Both countries have significant numbers of school buildings which are in need of repair and reconstruction.

Figure 16: Education Expenditures by Category (1994)



Based on the available data, it was possible to track emerging trends in the allocation of recurrent expenditures. As in the OECD countries, personnel expenditures consume the largest portion of expenditures. This was the case in CEE prior to the transition, and expenditures on personnel have grown in most countries since 1989. The share of expenditures devoted to non-wage costs has generally decreased across the other categories.

i) Student Transfers

State spending on student transfers has declined as subsidies have been cut and financing responsibilities have been deferred to families. Under socialism, students had access to a range of subsidized services and benefits including textbooks and school meals, as well as school related activities such as study trips and athletic excursions. The fiscal crisis has eroded many of these programs, and students and their families have begun to pay an increasing share of expenses (Table 4). Transfers declined significantly in Poland, from 9 percent in 1989 to 3 percent in 1994, as well as Albania, where they dropped from 8 percent to 5 percent.

Table 3: Expenditures on Student Transfers, 1990-1994 (% of total education expenditures)					
	1990	1991	1992	1993	1994
Albania	9.3	10.1	9.3	7.6	5.2
Bulgaria	11.2	11.8	10.3	11.0	10.2
Hungary	18.6	18.1	15.4	15.1	--
Poland	11.2	4.1	3.1	2.7	2.5

ii) Personnel

The share of education expenditures devoted to personnel has been protected during the transition, illustrating the failure of most CEE countries to address overstaffing of education sector staff, one of the most significant inefficiencies of the old system. Overstaffing, reflected in low student-teacher ratios, has persisted and even increased during the transition, due to the lack of incentives for efficient staffing. In most countries, the share of total education expenditures devoted to personnel has increased since 1989. In Bulgaria, spending grew from 51 percent to nearly 60 percent between 1989 and 1994. Similarly, between 1991 and 1994, personnel expenditures grew from 73 percent to 76 percent of education expenditures in Romania. The notable exception has been the Czech Republic, where personnel expenditures have declined steadily from 56 percent in 1989 to 38 percent in 1994, possibly a result of more rapid expansion of employment opportunities for teachers in the private sector, where wages are substantially higher. In real terms as well, personnel expenditures have been protected during the transition. Albania is an exception, where, commensurate with the overall collapse of real education expenditures in 1992, personnel spending fell 40 percent of the 1990 level.

iii) Utilities and Maintenance

During the period of socialist industrialization, the CEE countries made large investments in the physical infrastructure of education, building schools and other educational facilities in both urban and rural areas. While these investments vastly improved equity of access and overall quality, increasing costs of maintenance and upkeep proved unsustainable in many countries as fiscal pressures grew. By 1989, the condition of educational facilities in some of the poorer countries had deteriorated such that bearing the costs of repairing, heating and lighting school buildings was difficult. These expenses have increased during the transition, both because the cost of maintaining older buildings has grown, and due to large increases in the price of inputs as a result of price liberalization and the loss of subsidized energy resources from the CMEA.

The transition has been particularly difficult in certain countries. In Albania between 1990 and 1992, nearly one-third of school buildings were rendered unusable by vandalism, as people expressed their dissatisfaction with the previous regime through destruction of state property. As a result, the costs of reconstruction have been high. Between 1989 and 1994 the share of education expenditures spent on utilities nearly doubled in Albania, growing from 8 percent to 14 percent. Other countries, such as the Czech Republic, Romania, and Bulgaria, have struggled to maintain resources for the physical upkeep of educational infrastructure.

iv) Textbooks and Materials

Increasing costs of materials such as textbooks and supplies have additionally strained education budgets. The transition has involved a comprehensive assessment of curricula and methods to reflect new objectives and values. As a result, there is a desperate need in the classrooms for new educational

materials including textbooks and other teaching aids. Under the previous regime, textbooks were published and distributed by large state owned firms which had access to subsidized paper and other raw materials. Price liberalization and increasing budget constraints have raised printing costs and seriously hampered the ability of state publishing firms to update materials and maintain access to basic texts. Private publishers have emerged in many countries. However, their success has been limited by the persistence of subsidized raw materials to the state sector.

Financing arrangements for textbooks and materials have been increasingly diversified, with local governments and families assuming a greater share of responsibility. In Bulgaria, for example, municipalities assumed responsibility for the financing and delivery of textbooks in 1991. However, as the municipalities lacked the adequate resource base to maintain the new system, the process has been recently recentralized. Parents have begun to pay the cost of books and materials in many of the countries. Legislation enacted in Poland in 1989 required parents to pay for all textbooks, with the exception of books for students at special schools for the disabled and ethnic minorities. The growing burden on families is a serious concern in the context of declining real incomes.

Increasing diversity in the publication, delivery and funding of textbooks and materials has made collection of expenditure data in this category increasingly difficult. In the countries for which data were available, governments have been unable to respond to the growing demand for updated materials (Table 4). Croatia represents the largest decline, with the proportion of resources spent on textbooks dropping from 7 percent in 1991 to 4 percent in 1994.

Changes in Financing Mechanisms

Tightening government fiscal constraints and increased demand for certain types of education have led a number of countries to introduce different strategies for the financing of education. In some cases, countries have opted to reduce the fiscal burden on central governments by privatizing and decentralizing systems, devolving fiscal responsibility to households and local governments. Tuition payments have been introduced in some countries, most often for pre-school and university education. Countries have also experimented with a mix of public and private financing arrangements for academic research. The following section briefly discusses the range of mechanisms countries have adopted to cope with fiscal pressures.

Table 4: Private School Enrollments, 1994 (% of total enrollments)

	Pre-School	Basic	Secondary	Higher
Czech Republic	1.8	0.4	11.9	8.6
Hungary	1.8	2.2	3.6	7.0
Poland	1.7	0.5	2.4	9.9
Romania	0.1	--	0.1	27.1
Slovakia	--	3.5	3.1	--
France*	12.0	15.0	21.0	--
United Kingdom*	6.0	5.0	9.0	--
Bolivia*	10.0	10.0	26.0	--
Columbia*	58.0	17.0	40.0	--
Indonesia*	100.0	17.0	44.0	--
Thailand*	23.0	10.0	10.0	--
Philippines*	53.0	7.0	35.0	--

* data are for 1992

i) Private Education

Private schools have opened in many countries, and students now have increased opportunites for private tutorials and lessons. While expenditure data are lacking, it has been possible to document preliminary enrollment trends. Participation in private education has increased since 1989, especially at the higher levels of education. Secondary enrollments have increased, noticeably in the Czech Republic, where nearly 12 percent of total secondary enrollments were in private schools by 1994. This is largely an effect of the establishment of enterprise-supported vocational schools. The most growth in private enrollments has been recorded at the university level. In 1994, private enrollments comprised 10 percent of total enrollments in Poland and 9 percent in the Czech Republic. Private higher education has grown remarkably in Romania, reaching 27 percent of total university enrollments in 1994 (Table 3).

ii) Decentralization

In the context of the overall shift away from central planning, financing competences have been increasingly decentralized in many countries. Local governments have assumed a growing share of responsibility for the financing and delivery of education, especially at the pre-school and primary levels. In the Czech Republic, education reforms in 1991 transferred much of the financing of pre-school and primary education to local governments. Although difficult to document, decentralization may have significant equity costs, as financing for education becomes tied to regional resource bases and local governments. In Hungary, there are indications that decentralization has progressed too far, resulting in a highly unequal distribution of resources across municipalities. Such effects have serious implications for the quality of education across regions, especially between poorer rural and wealthier urban communities. In the countries of the former Yugoslavia, the trend is the reverse, where the dissolution of the federation has required a recentralization of the education administration.

iii) Alternative Funding Arrangements

In addition to privatization and decentralization, governments have explored a range of financing alternatives to ease growing fiscal pressures. Prior to the transition, educational institutions had limited authority over their own resources and were not authorized to mobilize additional revenues through tuition charges or other means. Administrators were constrained by internal restrictions and regulations set at the ministerial level. Deregulation and decentralization have increased the autonomy and flexibility of schools and universities in attracting and allocating financial resources.

In some countries, secondary schools and universities have set up alternative mechanisms for cost recovery, including the introduction of tuition payments, and partnerships with the private sector. A number of countries have introduced tuition fees, particularly for pre-school and university education, as well as non-tuition payments for books and materials, and other services. However, due to the strong legacy of public provision of education, countries have been reluctant to charge high fees. At the university level, partial payments are common, as are full fees for foreign students. The absence of provisions for student loans and grants has limited the introduction of tuition payments.

New arrangements have also emerged for the funding of academic research. Under socialism, research and development were politically controlled and outside the realm of universities. Specialized institutes, academies and industrial ministries conducted research based on the plans of government ministries, such as ministries of science and technology. In a number of countries, including Poland and Romania, councils have been established which are charged with allocating research grants through a competitive peer review process. However, despite changes in authority and administration, research funds have been significantly cut back in many countries, and as a result, opportunities for collaboration with the private sector in research and development are growing increasingly important (Laporte and Schweitzer, 1994).

IV. Staff in the Education Sector

The transition has led to rapid changes in the nature and scope of work of teachers and administrators in the education sector. For teaching staff, the transition has meant a review of teaching methods and styles. Education under socialism emphasized the mastery of facts over problem solving and critical thinking. There has been a clear need for more flexible teaching methods and curricula which will better prepare students for opportunities in a market economy. It is expected that the content and delivery of education will respond accordingly during the transition, although this is difficult to measure. Little information about qualitative changes in education and education outcomes in CEE is available.

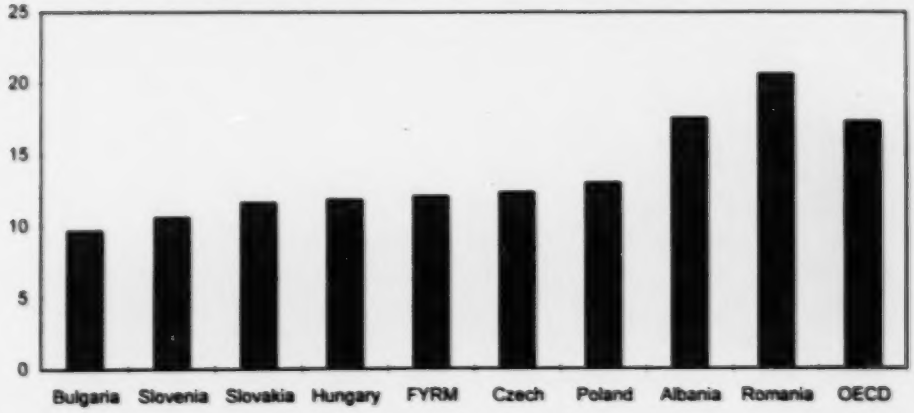
This section focuses on more measurable developments relating to teachers, examining student-teacher ratios, employment and wages. An initial glimpse of trends indicates that serious issues relating to teachers will need to be addressed. Overstaffing of teachers remains a major source of inefficiency in education. In terms of wages, teachers have suffered disproportionately to other occupations during the transition. This is of critical concern, as the quality of education depends on the quality of individuals attracted to teaching.

i) Student-Teacher Ratios

Low student-teacher ratios were a direct result of overemployment in the education sector and did not result in smaller class sizes. On the contrary, teacher time was inefficiently allocated through small teaching loads, overspecialization of subjects and high numbers of single-subject teachers. The latter has been difficult to address during the transition, as many poorly paid teachers rely on supplementary jobs outside of the education system to maintain their income. Fluctuations in student-teacher ratios by level of education contrast with enrollment trends. At the pre-school level, where enrollments have declined the most, the number of students per teacher has increased, while in the case of higher education, where enrollments have increased, the number of students per teacher has decreased.

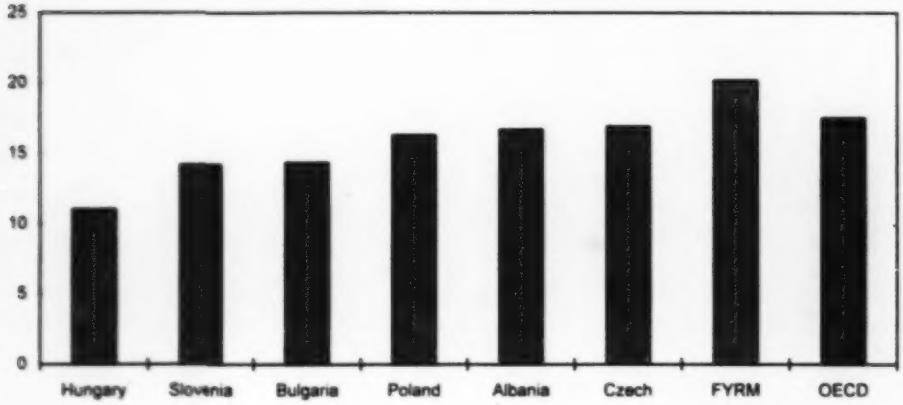
By international standards, student-teacher ratios in CEE are low and with few exceptions, have not changed during the transition (Figure 17a-c). In relation to the OECD countries, ratios are particularly low for pre-school and higher education. At the pre-school level, the average for OECD countries was 17 students per teacher in 1994, with countries at 22 students per teacher in the UK and

Figure 17a: Ratio of Students to Teaching Staff, Pre-School (1993)



* OECD data are 1994.

Figure 17b: Ratio of Students to Teaching Staff, Basic (1993)

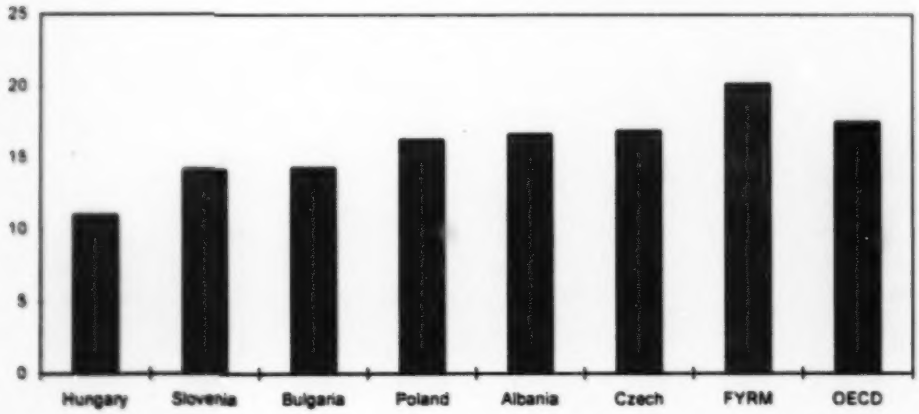


* OECD data are 1994.

France, to 19 in Germany and Spain. All of the countries, except Romania, fell below the average, with ratios ranging from 10 to 16. Ratios in the CEE countries are also low in relation to countries in Latin America and Asia, where there were over 40 students per teacher in the Philippines, 34 in Malaysia and over 20 in Brazil and Chile. Pre-school ratios have remained stable throughout the transition, declining only in Albania and Romania, the two countries with the highest student-teacher ratios at the outset of transition.

At the university level, student-teacher ratios are strikingly low in many countries[3]. In 1993 there were approximately two students per teaching staff in Hungary, and four in Bulgaria and Slovenia. These figures reflect the inclusion of a large number of part-time and adjunct teachers. In contrast, ratios were significantly higher in FYR Macedonia (16) and Albania (12).

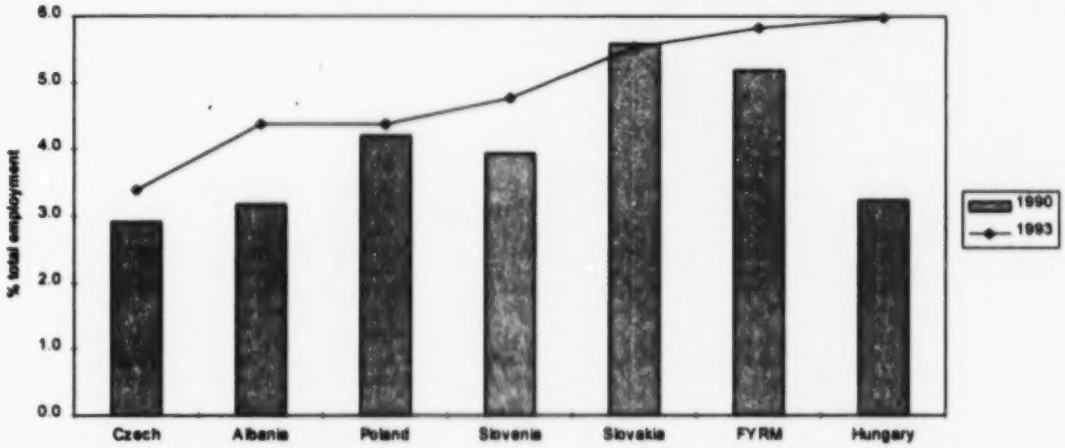
Figure 17c: Ratio of Students to Teaching Staff, Secondary (1993)



*OECD data are 1994.

[3] Full-time equivalent data may not be comparable across countries.

Figure 18: Employment in the Education Sector (1989 and 1993)

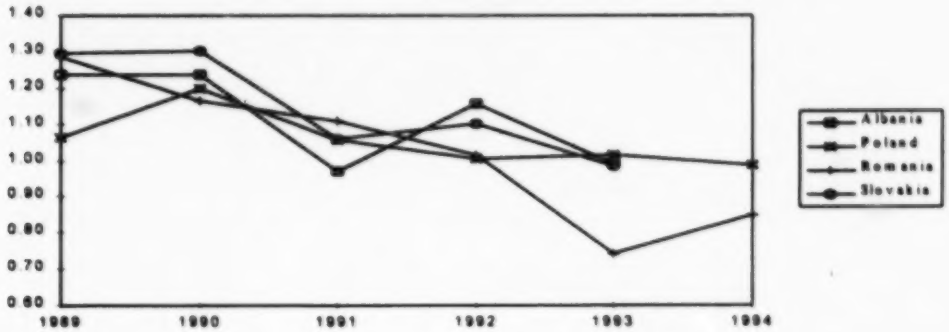


ii) Employment and Wages in the Education Sector

Given persistent overstaffing and the expansion of private education, it is not surprising that employment in education has grown relative to other sectors. Although overall employment in the region has dropped precipitously during the transition, the share of education in total employment increased in most countries between 1990 and 1993. In Hungary, employment in education, including teaching and administrative staff, doubled from 3 to 6 percent of total public sector employment (Figure 18). Similarly, the share of education in total employment grew from 3 to 4 percent in Albania and from 5 to nearly 6 percent in FYR Macedonia. Growth of employment may be a result of pressures on the education sector to absorb unemployed professionals from other fields as teachers.

While the transition has led to significant restructuring of public sector employment in large state-owned enterprises in industry and agriculture, education has been relatively unaffected by downsizing. At the university level, professors and administrators in a number of countries have been affected by the so-called "lustration" laws which have barred high level communist officials from working in politics, the media and academia. In the Czech Republic, for example, individuals who were at the top of the Party hierarchy were restricted from teaching for a five-year period. In general, however, teachers have been protected from staffing cuts and layoffs.

Figure 19: Ratio of Average Wage in the Education Sector to Average Wage in the Economy (1989-1993)



Teachers remain among the lowest paid professionals in the region. While some groups of white-collar workers have seen their wages increase since the transition, teachers' wages have fallen more than average wages in the rest of the economy. The ratio of teachers' wages to the average wage has fallen consistently between 1989 and 1994 in Albania, Poland, Romania and Slovakia (Figure 19). This trend requires further investigation, taking into account differences in private and public sector wages and deviations across levels of education. Without adequate measures for compensation, it will be difficult for public education systems to attract and retain high quality teachers.

V. Main Findings and Further Research

Transition has led to rapid and dramatic changes in the education sector in Central and Eastern Europe. Following decades of central planning and tight political control, education systems are becoming more demand-driven, responding to increased demand for higher education and general secondary education. Evidence clearly indicates that growing importance of education as a determinant of labor market success is influencing students' choice of study. On the financing side, governments are adopting a range of alternative funding arrangements to cope with fiscal pressures, including the introduction of alternative funding strategies, and the strengthening of institutional capacity for mobilizing revenues. Despite these developments, CEE countries face daunting challenges as they attempt to adjust their education and training systems to the requirements of a market economy. This paper documents basic empirical trends in the access and financing of education, raising critical questions about the future of education and training systems in the region. Main findings include:

Access to education, as measured by enrollment trends, has evolved in response to changes in student demand.

- Enrollments at the pre-school level, have fallen in all countries except Hungary, since 1989, as a result of declining female employment, the elimination of state subsidized child care and the growing cost of preschool education for families.
- Trends in basic school enrollments have been mixed, declining in Albania, Bulgaria, FYR Macedonia, Romania and Poland, and increasing slightly in the Czech Republic, Hungary and Slovakia. The reduction of government subsidies for education, such as those for textbooks and materials, has made it increasingly difficult for poorer families to keep their children in school.
- Demand for secondary education has shifted in response to labor market developments. Enrollments in academic general secondary programs have increased, while demand for career-specific vocational and technical secondary training has tapered off. High unemployment rates among vocational secondary graduates and the growing importance of tertiary education have led more students to choose general programs over specialized technical and vocational tracks.
- The increased importance of higher education as a determinant of labor market status and earnings potential has encouraged students to prolong their education and continue on to university. Some governments have prioritized the expansion of higher education, and taken initial steps toward restructuring.

Labor market developments highlight the significance of education during the transition and reveal critical priorities for reform within education and training systems.

- Changes in university enrollments illustrate that student choices have been adapting to changes in labor market demands. Social science enrollments have increased markedly since 1989, while engineering and physical science enrollments have fallen, paralleling shifts between employment sectors.
- High levels of unemployment among young workers and the poorly educated illustrate the limited capacity of education systems in Central and Eastern Europe to prepare workers for the employment demands of a market economy.
- The need for adult education and training has increased with transition, as the pool of displaced workers grows and mid-career changes become more common.

Changes in ***education financing***, including the establishment of private education, decentralization, and the introduction of alternative cost recovery mechanisms have been adopted in response to economic restructuring and growing fiscal pressures. Expenditures on education have declined in real terms, but have generally been protected or increased as a share of GDP and public expenditures.

- Governments in the region have maintained spending on education during the transition. As a share of GDP and total public spending, education expenditures increased throughout the region between 1989 and 1994. Education expenditures in most Central and Eastern European countries are equal to or higher than West European countries at much higher income levels, and are higher than Asian and Latin American countries at similar income levels.
- Education expenditures in the region collapsed alongside economic contraction. Real spending on education remains below 1990 levels in all countries except Hungary, although growth has resumed in Poland, Romania, the Czech Republic and Albania.
- Increases in education expenditures have not been accompanied by greater efficiency in resource allocation and usage. As is the case in OECD countries, personnel expenditures consume the bulk of education expenditures in CEE. Spending on personnel has been protected, or increased during the transition, a side effect of persistent overstaffing in the education sector and pressures on the system to absorb displaced professionals. Capital expenditures remain low in many countries, and limit the ability of countries such as FYR Macedonia, Romania and Albania to rehabilitate and utilize run-down, or damaged educational facilities.

The work of ***teachers*** has been greatly impacted by the transition. While transition has led to significant changes in teaching styles and the substance of teaching in most countries, little restructuring has taken place within the education sector. Overstaffing persists and employment in education has even increased in some countries.

- Student-teacher ratios in CEE are low by international standards, especially for pre-school and university education. Despite overemployment, class sizes remain large as teacher time remains inefficiently allocated through small teaching loads, overspecialization of subjects and high numbers of single-subject teachers.
- Wages in the education sector have fallen along with real wages in the rest of the economy. In Albania, Poland, Romania and Slovakia, countries where data were available, wages in the education sector have fallen further than the average wage.

While education systems have transformed significantly during the first phases of transition, policy challenges remain in order to increase efficiency in financing and delivery, improve incentives for staff working in the sector, and ensure equity of access to education across socioeconomic groups. Further in-depth cross-country research is critical to shape the ongoing reform agenda. Possible topics include:

- Analysis of qualitative developments, including changes in curricula, textbook content and teaching methods.
- Further research on links between labor markets and education, including returns to education and analysis of how university graduates from various fields have fared in the labor market.
- Investigation into the impact of decentralization on education administration and finance and the implications for the equity of access and the quality of education.

References

Allison, C. and Ringold, D. 1996. "Labor Markets in Transition in Central and Eastern Europe: 1989-1995" World Bank Technical Paper No. 352: *Social Challenges of Transition Series*, The World Bank, Washington, DC.

Barr, Nicholas, ed. 1994. *Labor Markets and Social Policy in Central and Eastern Europe: The Transition and Beyond*, Oxford University Press.

Chase, R. S. 1995a. "Women's Labor Force Participation During and After Communism: A Case Study of the Czech Republic and Slovakia," Department of Economics, Yale University, New Haven, CT.

Chase, R. S. 1995b. "Returns to Education and Experience in Transition: the Czech Republic and Slovakia," Department of Economics, Yale University, New Haven, CT.

Heynemann, S. ed. 1994, "Education in the Europe and Central Asia Region: Policies of Adjustment and Excellence." Report No. IDP-145. ECA Region, The World Bank, Washington DC.

Kornai, J. 1992. *The Socialist System: The Political Economy of Communism*. Princeton, NJ: Princeton University Press.

Laporte, B. and Schweitzer, J. 1994. "Education and Training." In N. Barr, ed., *Labor Markets and Social Policy in Central and Eastern Europe: The Transition and Beyond*. New York: Oxford University Press.

Laporte, B. 1993. "Financing Education and Training in Central and Eastern Europe: A New Social Contract." *Education Economics*, Vol. 1, No. 2. pp. 115-127.

OECD (Organisation for Economic Cooperation and Development). 1996a. *Education at a Glance: OECD Indicators*, Paris.

OECD (Organisation for Economic Cooperation and Development). 1996b. *Education at a Glance: Analysis*, Paris.

OECD (Organisation for Economic Cooperation and Development). 1995. *Education at a Glance: OECD Indicators*, Paris.

O'Leary, C. 1996. "Employment Policy for Transition in Hungary and Poland," paper presented at the NAS/NRC Task Force on Economies in Transition, Workshop IV.

UNDP, *Bulgaria: Human Development Report, 1995*.

Rupnik, J. 1992. "Higher Education and the Reform Process in Central and Eastern Europe," *European Journal of Education*, Vol. 27, Nos. 1/2. pp. 145-185.

Rutkowski, J. 1996a. "Changes in the Wage Structure during Economic Transition in Central and Eastern Europe" World Bank Technical Paper No. 340: *Social Challenges of Transition Series*, The World Bank, Washington, DC.

Rutkowski, J. 1996b. "Labor Markets, Welfare and Social Policy During Economic Transition in Poland" Draft mimeo.

UNESCO. 1995a. *Report of the UNESCO-UNDP Fact-Finding Mission on: Public Expenditure on Education in the Former Yugoslav Republic of Macedonia.* Preliminary draft.

UNESCO. 1995b. *World Education Report*, UNESCO Publishing: Oxford.

U.S. Department of Education. 1996. "Pursuing Excellence: Initial Findings from the Third International Mathematics and Science Study." U.S. Government Printing Office: Washington, DC.

World Bank. 1995. *World Development Report, 1996: From Plan to Market.*

Table 1: Female Share of the Labor Force (1993) (% of total)	
Slovakia	41.7
Hungary	43.8
Poland	45.0
Slovenia	46.4
Bulgaria	47.0
Romania[a]	47.4
Czech Republic	48.0
OECD	28.0
OECD Europe	23.0

a) 1992

Table 2: Pre-School Enrollment Indices (1989=100)						
	1989	1990	1991	1992	1993	1994
Albania	100.0	103.7	86.9	64.7	64.2	64.1
Bulgaria	100.0	95.7	81.6	82.8	77.9	77.7
Czech Republic	100.0	89.3	82.2	82.8	84.5	86.2
Hungary	100.0	99.7	100.5	100.5	101.2	101.0
Poland	100.0	93.2	83.5	76.9	74.4	75.2
Romania	100.0	100.6	90.5	89.3	90.5	85.7
Slovakia	100.0	89.6	78.2	78.1	76.2	74.2
Slovenia	100.0	97.1	91.5	87.1	88.6	88.0

Table 3: Basic School Enrollment Rates (% of age group)					
	1990	1991	1992	1993	1994
Albania	100.6	97.5	93.7	94.1	95.3
Bulgaria	97.8	95.8	93.7	91.8	91.9
Czech Republic	98.1	100.6	101.9	102.8	104.1
FYR Macedonia	--	92.5	91.5	90.6	90.6
Hungary	--	91.3	93.6	96.8	99.5
Poland	99.5	99.3	99.4	99.4	97.9
Romania	98.3	95.4	94.9	94.7	94.6
Slovakia	96.2	98.1	99.7	99.9	--
Slovenia	96.0	95.6	96.0	96.8	--

Table 4: General Secondary Enrollment Rates (% of age group)					
	1990	1991	1992	1993	1994
Albania	20.7	24.0	25.6	25.4	25.9
Bulgaria	29.5	28.9	29.5	29.6	31.2
Czech Republic	16.0	16.0	16.3	12.0	11.9
Hungary	19.3	19.6	20.0	19.9	20.5
FYR Macedonia	53.9	52.5	51.4	50.3	51.0
Poland	21.0	22.7	24.5	26.0	27.5
Romania	2.3	11.4	16.0	17.7	19.1
Slovakia	15.5	16.0	16.8	17.7	16.9
Slovenia	19.7	19.9	21.3	21.1	--

Table 5: Technical Secondary Enrollments - 4-5 year programs (% of age group)					
	1990	1991	1992	1993	1994
Albania	33.5	19.7	12.5	8.9	6.7
Bulgaria	24.3	23.4	21.5	20.1	22.1
Czech Republic	24.2	25.2	27.5	33.0	38.3
Hungary	26.4	26.9	27.2	27.7	28.7
Poland	--	34.2	35.2	37.7	38.3
Romania	85.6	53.6	34.0	27.8	27.5
Slovakia	24.3	26.0	27.9	29.8	--
Slovenia	25.6	25.2	27.4	28.9	--

Table 6: Vocational Secondary Enrollments - 1-3 year programs (% of age group)					
	1990	1991	1992	1993	1994
Bulgaria	22.4	22.0	21.8	21.8	20.6
Czech Republic	43.7	39.4	37.7	37.0	38.4
Hungary	34.8	33.3	30.9	28.6	27.1
Poland	34.8	33.5	32.0	30.5	29.5
Romania	20.2	23.9	24.1	21.3	19.4
Slovakia	41.9	39.0	37.3	36.7	--
Slovenia	35.5	36.2	32.2	31.3	--

Table 7: Higher Education Enrollment Rates (% of age group)					
	1990	1991	1992	1993	1994
Albania	5.8	6.0	5.9	5.2	4.6
Bulgaria	21.2	20.8	21.8	23.2	26.3
Czech Republic	13.8	12.6	12.4	13.3	13.1
FYR Macedonia	14.9	15.6	16.2	15.9	16.7
Hungary	12.3	12.9	14.2	16.4	18.7
Poland	13.3	13.8	16.0	18.7	21.5
Romania	6.9	8.7	10.4	12.8	16.3
Slovakia	11.4	11.1	11.4	11.7	11.9

Table 8: Unemployment and Education (1995) (% of labor force)				
	Basic	General Secondary	Vocational Secondary	Higher
Bulgaria	25.1	15.6	11.6	5.3
Czech Republic	9.9	1.9	3.3	1.1
Hungary	16.0	6.8	12.2	2.7
Poland	14.6	13.4	18.7	4.2
Romania	5.2	14.8	8.7	2.3
Slovakia	29.2	12.7	13.0	2.9

a) 1991 data

Table 9: Enrollments in Engineering Programs (% of total enrollments)

	1989	1990	1991	1992	1993	1994
Albania	20.7	20.6	19.5	17.7	14.9	13.6
Bulgaria	47.9	47.9	42.2	38.0	33.4	--
Czech Republic	45.5	43.1	40.7	40.1	35.0	36.3
FYR Macedonia	31.8	32.5	32.8	32.0	34.5	34.0
Hungary	29.0	29.0	--	30.2	28.3	--
Poland	28.3	28.4	29.1	27.5	27.2	
Romania	66.9	66.9	50.9	41.5	33.7	26.2
Slovakia	47.0	43.6	40.1	38.4	36.7	--
Slovenia	27.5	25.6	22.4	23.5	22.2	--
Bolivia	--	--	--	*32.0*	--	--
Colombia	--	--	--	*31.0*	--	--
Ecuador	--	--	--	*21.0*	--	--
Indonesia	--	--	--	*22.0*	--	--
Philippines	--	--	--	*26.0*	--	--
Thailand	--	--	--	*19.0*	--	--

Table 10: Enrollments in Social Science Programs (% of enrollments)

	1989	1990	1991	1992	1993	1994
Albania	12.1	11.1	11.2	11.4	9.4	15.3
Bulgaria	21.4	21.3	26.3	31.9	37.9	--
Czech Republic	18.5	17.1	19.3	19.7	21.2	24.9
FYR Macedonia	33.1	31.5	28.9	27.7	26.5	29.3
Hungary	--	18.3	--	25.4	25.6	25.6
Poland	16.5	16.7	18.4	22.2	24.7	31.2
Romania	--	12.3	16.7	20.0	28.6	16.6
Slovakia	31.3	34.1	37.1	39.5	41.5	--
Slovenia	27.0	26.7	34.6	37.9	40.3	--
Bolivia	--	--	--	*41.0*	--	--
Colombia	--	--	--	*39.0*	--	--
Ecuador	--	--	--	*41.0*	--	--
Indonesia	--	--	--	*55.0*	--	--
Philippines	--	--	--	*26.0*	--	--
Thailand	--	--	--	*50.0*	--	--

Table 11: Education Expenditures as % of GDP

	1989	1990	1991	1992	1993	1994
Albania	4.0	4.2	5.0	4.4	3.7	3.6
Bulgaria	5.0	6.0	5.2	6.5	6.4	5.7
Czech	4.9	6.0	5.7	6.9	6.9	5.5
FYR Macedonia	--	5.1	6.9	5.4	5.9	6.2
Hungary	5.1	5.5	5.9	6.2	6.3	6.8
Poland	3.6	4.9	4.5	4.7	4.7	4.7
Romania	2.1	2.7	3.5	3.0	3.0	3.1
Slovakia	5.1	5.4	5.8	6.2	5.5	--
Slovenia	--	--	--	5.1	5.1	5.5

Table 12: Real Spending on Education (1990=100)	1990	1991	1992	1993	1994
Albania	1.00	0.85	0.70	0.63	0.67
Bulgaria	1.00	0.76	0.89	0.81	0.64
Czech	1.00	0.82	0.93	0.93	0.76
FYR Macedonia	1.00	1.23	0.84	0.80	0.80
Hungary	1.00	0.98	1.06	1.04	1.07
Poland	1.00	0.86	0.92	1.24	0.99
Romania	1.00	1.12	0.86	0.88	0.96
Slovakia	1.00	0.94	0.93	0.82	--

Table 13: Per Pupil Spending Relative to GDP Per Capita (1994)	Pre-School	Basic	Secondary	University
Albania	9	12	31	138
Bulgaria	36	23	16	30
Czech Republic	19	16	32	66
FYR Macedonia	10	25	38	--
Hungary*	29	26	31	110
Poland	20	17	16	45
Romania	9	12	6	34
Slovakia*	12	10	15	58
Slovenia*	19	8	52	59
OECD*	16	18	26	49

* 1993 data

Table 14: Education Expenditures (% of total public expenditures)	1989	1990	1991	1992	1993	1994
Albania	--	8.4	6.7	9.6	8.9	9.7
Bulgaria	8.5	9.8	10.3	14.3	13.3	11.0
Czech	--	--	--	14.3	13.8	10.9
FYR Macedonia	--	--	13.7	10.9	11.2	11.5
Hungary	8.4	9.6	11.0	10.2	10.2	10.9
Poland	8.9	11.2	9.1	9.1	9.5	9.4
Romania	4.9	7.1	9.1	7.1	8.8	9.3
Slovakia	--	--	--	10.9	11.2	--
Slovenia	--	--	--	11.0	11.0	11.5

Table 15: Education Expenditures by Category (1994) (% of total)	Personnel	Non-personnel	Capital
Albania	66.6	25.2	8.2
Bulgaria	59.1	30.4	10.6
Czech	37.4	49.2	13.4
FYR Macedonia	81.8	15.8	2.5
Hungary	66.5	30.3	3.1
Poland	69.6	24.5	5.9
Romania	76.1	18.7	5.2
Slovakia*	54.5	37.2	8.3
Slovenia	63.5	26.6	9.9
OECD*	69.0	31.0	12.8

*1993 data

Table 16: Pre-School - Ratio of Students to Teaching Staff (1989-1994)

	1989	1990	1991	1992	1993	1994
Albania	23.0	23.0	20.0	16.0	17.6	18.1
Bulgaria	11.2	10.6	9.2	9.6	9.7	10.8
Czech Republic	12.6	11.1	11.0	11.1	12.4	12.5
Hungary	11.6	11.6	11.9	11.7	11.8	--
FYR Macedonia	13.6	13.3	13.1	12.2	12.1	--
Poland	14.5	13.6	13.6	13.3	13.0	14.3
Romania	26.6	26.7	20.3	20.4	20.6	19.1
Slovakia	12.9	11.6	10.9	10.9	11.6	--
Slovenia	10.9	10.6	10.6	10.3	10.6	10.2
OECD	--	--	--	--	**17.3**	--

Table 17: Basic Education - Ratio of Students to Teaching Staff (1989-1994)

	1989	1990	1991	1992	1993	1994
Albania	19.2	19.1	18.3	17.2	16.7	17.8
Bulgaria	16.2	15.3	14.8	14.3	14.3	13.9
Czech Republic	20.9	19.9	19.2	18.2	16.9	16.0
Hungary	13.1	12.8	12.1	11.6	11.0	--
FYR Macedonia	21.0	20.8	20.7	20.9	20.2	19.9
Poland	17.8	16.1	16.5	16.6	16.3	16.0
Romania	21.1	20.4	16.7	16.6	15.7	15.4
Slovakia	20.0	19.4	18.9	17.7	17.8	--
Slovenia	15.5	15.4	15.3	14.6	14.2	--
OECD	--	--	--	--	**17.5**	--

Table 18: Secondary Education - Ratio of Students to Teaching Staff (1989-1994)

	1989	1990	1991	1992	1993	1994
Albania	15.6	15.5	12.7	11.2	10.0	13.8
Bulgaria	14.4	14.4	13.4	12.5	11.9	12.4
Czech Republic	11.4	11.9	12.3	11.7	10.3	9.3
Hungary	14.3	14.4	13.9	13.8	13.0	--
FYR Macedonia	8.9	8.8	8.5	8.4	8.2	--
Poland	10.7	11.7	12.2	13.0	13.6	13.9
Romania	--	--	24.3	19.1	16.5	15.6
Slovakia	17.3	17.4	17.4	16.5	16.5	--
Slovenia	3.2	3.5	3.6	3.7	3.5	--
OECD	--	--	--	--	**13.8**	--

Table 19: Higher Education - Ratio of Students to Teaching Staff (1989-1994)

	1989	1990	1991	1992	1993	1994
Albania	11.7	12.2	12.6	13.6	12.9	10.0
Bulgaria	3.9	4.0	3.8	4.6	5.1	5.8
Czech Republic	9.8	9.6	8.8	8.8	9.4	10.3
Hungary	--	--	--	2.3	2.4	--
FYR Macedonia	19.9	16.3	18.0	15.9	15.9	16.2
Poland	2.8	2.8	3.0	3.7	4.4	5.1
Romania	14.3	6.3	5.1	4.6	4.6	4.6
Slovakia	3.1	3.3	3.4	3.5	3.9	--
Slovenia	3.6	3.4	4.2	4.8	5.2	--

Table 20: Ratio of the Average Wage in the Education Sector to the Average Wage in the Economy

	1989	1990	1991	1992	1993	1994
Albania	1.24	1.24	0.97	1.16	0.99	--
Czech Republic	--	--	--	1.22	1.23	--
Poland	1.06	1.20	1.06	1.01	1.01	0.99
Romania	1.29	1.16	1.11	1.02	0.74	0.85
Slovakia	1.30	1.30	1.06	1.10	0.98	--

Distributors of World Bank Publications

Prices and credit terms vary from country to country. Consult your local distributor before placing an order.

ARGENTINA
Oficina del Libro Internacional
Av. Cordoba 1877
1120 Buenos Aires
Tel: (54 1) 815-8354
Fax: (54 1) 815-8156

AUSTRALIA, FIJI, PAPUA NEW GUINEA, SOLOMON ISLANDS, VANUATU, AND WESTERN SAMOA
D.A. Information Services
648 Whitehorse Road
Mitcham 3132
Victoria
Tel: (61) 3 9210 7777
Fax: (61) 3 9210 7788
E-mail: service@dadirect.com.au
URL: http://www.dadirect.com.au

AUSTRIA
Gerold and Co.
Weihburggasse 26
A-1011 Wien
Tel: (43 1) 512-47-31-0
Fax: (43 1) 512-47-31-29
URL: http://www.gerold.co.at.online

BANGLADESH
Micro Industries Development Assistance Society (MIDAS)
House 5, Road 16
Dhanmondi R/Area
Dhaka 1209
Tel: (880 2) 326427
Fax: (880 2) 811188

BELGIUM
Jean De Lannoy
Av. du Roi 202
1060 Brussels
Tel: (32 2) 538-5169
Fax: (32 2) 538-0841

BRAZIL
Publicações Técnicas Internacionais Ltda.
Rua Peixoto Gomide, 209
01409 Sao Paulo, SP.
Tel: (55 11) 259-6644
Fax: (55 11) 258-6990
E-mail: postmaster@pti.usp.br
URL: http://www.usp.br

CANADA
Renouf Publishing Co. Ltd.
1294 Algoma Road
Ottawa, Ontario K1J 6J3
Tel: (613) 745-2665
Fax: (613) 745-7660
E-mail: renouf@fox.nstn.ca
URL: http://www.fox.nstn.ca/~renouf

CHINA
China Financial & Economic Publishing House
8, Da Fo Si Dong Jie
Beijing
Tel: (86 10) 6333-8827
Fax: (86 10) 6401-7365

COLOMBIA
Infoenlace Ltda.
Carrera 6 No. 51-21
Apartado Aereo 34270
Santafé de Bogotá, D.C.
Tel: (57 1) 285-2798
Fax: (57 1) 285-2798

CYPRUS
Center for Applied Research
Cyprus College
6, Diogenes Street, Engomi
P.O. Box 2006
Nicosia
Tel: (357 2) 44-1730
Fax: (357 2) 45-2051

CZECH REPUBLIC
National Information Center
prodejna, Konviktska 5
CS – 113 57 Prague 1
Tel: (42 2) 2422-9433
Fax: (42 2) 2422-1484
URL: http://www.nis.cz/

DENMARK
SamfundsLitteratur
Rosenoerns Allé 11
DK-1970 Frederiksberg C
Tel: (45 31) 351942
Fax: (45 31) 357822

EGYPT, ARAB REPUBLIC OF
Al Ahram Distribution Agency
Al Galaa Street
Cairo
Tel: (20 2) 578-6083
Fax: (20 2) 578-6833

The Middle East Observer
41, Sherif Street
Cairo
Tel: (20 2) 393-9732
Fax: (20 2) 393-9732

FINLAND
Akateeminen Kirjakauppa
P.O. Box 128
FIN-00101 Helsinki
Tel: (358 9) 12141
Fax: (358 9) 121-4441
URL: http://www.akateeminen.com/

FRANCE
World Bank Publications
66, avenue d'Iéna
75116 Paris
Tel: (33 1) 40-69-30-60/67
Fax: (33 1) 40-69-30-68

GERMANY
UNO-Verlag
Poppelsdorfer Allee 55
53115 Bonn
Tel: (49 228) 212940
Fax: (49 228) 217492

GREECE
Papasotiriou S.A.
35, Stournara Str.
106 82 Athens
Tel: (30 1) 364-1826
Fax: (30 1) 364-8254

HAITI
Culture Diffusion
5, Rue Capois
C.P. 257
Port-au-Prince
Tel: (509 1) 3 9260

HONG KONG, MACAO
Asia 2000 Ltd.
Sales & Circulation Department
Seabird House, unit 1101-02
22-28 Wyndham Street, Central
Hong Kong
Tel: (852) 2530-1409
Fax: (852) 2526-1107
E-mail: sales@asia2000.com.hk
URL: http://www.asia2000.com.hk

INDIA
Allied Publishers Ltd.
751 Mount Road
Madras - 600 002
Tel: (91 44) 852-3938
Fax: (91 44) 852-0649

INDONESIA
PT. Indira Limited
Jalan Borobudur 20
P.O. Box 181
Jakarta 10320
Tel: (62 21) 390-4290
Fax: (62 21) 421-4289

IRAN
Kaveh Sara Co. Publishers
Khaled Eslambol Ave.,
6th Street
Kaveh Delafrooz No. 8
P.O. Box 15745-733
Tehran
Tel: (98 21) 8717819; 8718104
Fax: (98 21) 8712479
E-mail: kaveh-sara@neda.net.ir

Kowkab Publishers
P.O. Box 19575-511
Tehran
Tel: (98 21) 258-3723
Fax: (98 21) 258-3723

IRELAND
Government Supplies Agency
Oifig an tSoláthair
4-5 Harcourt Road
Dublin 2
Tel: (353 1) 661-3111
Fax: (353 1) 475-2670

ISRAEL
Yozmot Literature Ltd.
P.O. Box 56055
3 Yohanan Hasandler Street
Tel Aviv 61560
Tel: (972 3) 5285-397
Fax: (972 3) 5285-397

R.O.Y. International
PO Box 13056
Tel Aviv 61130
Tel: (972 3) 5461423
Fax: (972 3) 5461442
E-mail: royil@netvision.net.il

Palestinian Authority/Middle East
Index Information Services
P.O.B. 19502 Jerusalem
Tel: (972 2) 6271219
Fax: (972 2) 6271634

ITALY
Licosa Commissionaria Sansoni SPA
Via Duca Di Calabria, 1/1
Casella Postale 552
50125 Firenze
Tel: (39) 055-645-415
Fax: (39) 055-641-257
E-mail: licosa@flbox.it
Url: http://www.flbox.it/licosa

JAMAICA
Ian Randle Publishers Ltd.
206 Old Hope Road
Kingston 6
Tel: 809-927-2085
Fax: 809-977-0243
E-mail: irpl@colis.com

JAPAN
Eastern Book Service
3-13 Hongo 3-chome, Bunkyo-ku
Tokyo 113
Tel: (81 3) 3818-0861
Fax: (81 3) 3818-0864
E-mail: orl-vdw@gpp.bekkoame.or.jp
URL: http://www.bekkoame.or.jp/~orl-vdw

KENYA
Africa Book Service (E.A.) Ltd.
Quaran House, Mfangano Street
P.O. Box 45245
Nairobi
Tel: (254 2) 223 641
Fax: (254 2) 330 272

KOREA, REPUBLIC OF
Daejon Trading Co. Ltd.
P.O. Box 34, Yeoido
706 Seoam Bldg
44-6 Yeoido-Dong, Yeongdeungpo-Ku
Seoul
Tel: (82 2) 785-1631/4
Fax: (82 2) 784-0315

MALAYSIA
University of Malaya Cooperative Bookshop, Limited
P.O. Box 1127
Jalan Pantai Baru
59700 Kuala Lumpur
Tel: (60 3) 756-5000
Fax: (60 3) 756-4404

MEXICO
INFOTEC
Av. San Fernando No. 37
Col. Toriello Guerra
14050 Mexico, D.F.
Tel: (52 5) 624-2800
Fax: (52 5) 624-2822
E-mail: infotec@rtn.net.mx
URL: http://rtn.net.mx

NEPAL
Everest Media International Services (P) Ltd.
GPO Box 5443
Kathmandu
Tel: (977 1) 472 152
Fax: (977 1) 224 431

NETHERLANDS
De Lindeboom/Internationale Publicaties
P.O. Box 202
7240 AE Haarlemmermeer
Tel: (31 20) 574-0004
Fax: (31 20) 572-0888
E-mail: lindeboom@worldonline.nl
URL: http://www.worldonline.nl/~lindeboom

NEW ZEALAND
EBSCO NZ Ltd.
Private Mail Bag 99914
New Market
Auckland
Tel: (64 9) 524-8119
Fax: (64 9) 524-8067

NIGERIA
University Press Limited
Three Crowns Building Jericho
Private Mail Bag 5095
Ibadan
Tel: (234 22) 41-1356
Fax: (234 22) 41-2056

NORWAY
NIC Info A/S
Book Department
P.O. Box 6125 Etterstad
N-0602 Oslo 6
Tel: (47 22) 57-3300
Fax: (47 22) 68-1901

PAKISTAN
Mirza Book Agency
65, Shahrah-e-Quaid-e-Azam
Lahore 54000
Tel: (92 42) 735 3601
Fax: (92 42) 576 3083

Oxford University Press
5 Bangalore Town
Sharae Faisal
PO Box 13033
Karachi-75350
Tel: (92 21) 446307
Fax: (92 21) 4547640
E-mail: oup@oup.khi.sdnpk.com.pk

Pak Book Corporation
Aziz Chambers 21
Queen's Road
Lahore
Tel: (92 42) 636 3222; 636 0885
Fax: (92 42) 636 2328
E-mail: pbc@brain.net.pk

PERU
Editorial Desarrollo SA
Apartado 3824
Lima 1
Tel: (51 14) 285380
Fax: (51 14) 286628

PHILIPPINES
International Booksource Center Inc.
1127-A Antipolo St.
Barangay, Venezuela
Makati City
Tel: (63 2) 896 6501; 6502; 6507
Fax: (63 2) 896 1741

POLAND
International Publishing Service
Ul. Piekna 31/37
00-677 Warzawa
Tel: (48 2) 628-6089
Fax: (48 2) 621-7226
E-mail: bookpol@ikp.atm.com.pl
URL: http://www.ipsg.waw.pl/ips/export/

PORTUGAL
Livraria Portugal
Apartado 2681
Rua Do Carmo 70-74
1200 Lisbon
Tel: (1) 347-4982
Fax: (1) 347-0264

ROMANIA
Compani De Librari Bucuresti S.A.
Str. Lipscani no. 26, sector 3
Bucharest
Tel: (40 1) 613 9645
Fax: (40 1) 312 4000

RUSSIAN FEDERATION
Isdatelstvo «Ves Mir»
9b, Lotoshinsky Pereulok
Moscow 101200
Tel: (7 095) 917 87 49
Fax: (7 095) 917 92 59

SINGAPORE, TAIWAN, MYANMAR, BRUNEI
Asiapac Publishing Asia Pacific Pte. Ltd.
41 Kallang Pudding Road #04-03
Golden Wheel Building
Singapore 349316
Tel: (65) 741-5166
Fax: (65) 742-9356
E-mail: asiapac@asianconnect.com

SLOVENIA
Gospodarski Vestnik Publishing Group
Dunajska cesta 5
1000 Ljubljana
Tel: (386 61) 133 83 47; 132 12 30
Fax: (386 61) 133 80 30
E-mail: belind@gvestnik.si

SOUTH AFRICA, BOTSWANA
For single titles:
Oxford University Press Southern Africa
P.O. Box 1141
Cape Town 8000
Tel: (27 21) 45-7266
Fax: (27 21) 45-7265

For subscription orders:
International Subscription Service
P.O. Box 41095
Craighall
Johannesburg 2024
Tel: (27 11) 880-1448
Fax: (27 11) 880-6248
E-mail: isa@iw.co.za

SPAIN
Mundi-Prensa Libros, S.A.
Castello 37
28001 Madrid
Tel: (34 1) 431-3399
Fax: (34 1) 575-3998
E-mail: libreria@mundiprensa.es
URL: http://www.mundiprensa.es/

Mundi-Prensa Barcelona
Consell de Cent, 391
08009 Barcelona
Tel: (34 3) 488-3492
Fax: (34 3) 487-7659
E-mail: barcelona@mundiprensa.es

SRI LANKA, THE MALDIVES
Lake House Bookshop
100, Sir Chittampalam Gardiner Mawatha
Colombo 2
Tel: (94 1) 32105
Fax: (94 1) 432104
E-mail: LHL@sol.lanka.net

SWEDEN
Wennergren-Williams AB
P.O. Box 1305
S-171 25 Solna
Tel: (46 8) 705-97-50
Fax: (46 8) 27-00-71
E-mail: mail@wwi.se

SWITZERLAND
Librairie Payot
Service Institutionnel
Côtes-de-Montbenon 30
1002 Lausanne
Tel: (41 21) 341-3229
Fax: (41 21) 341-3235

ADECO Van Diemen Editions Techniques
Ch. de Lacuez 41
CH1807 Blonay
Tel: (41 21) 943 2673
Fax: (41 21) 943 3605

TANZANIA
Oxford University Press
Maktaba Street
PO Box 5299
Dar es Salaam
Tel: (255 51) 30078
Fax: (255 51) 46822

THAILAND
Central Books Distribution
306 Silom Road
Bangkok 10500
Tel: (66 2) 235-5400
Fax: (66 2) 237-8321

TRINIDAD & TOBAGO, AND THE CARIBBEAN
Systematics Studies Unit
9 Watts Street
Curepe
Trinidad, West Indies
Tel: (809) 662-5654
Fax: (809) 662-5654
E-mail: wilson@trinidad.net

UGANDA
Gustro Ltd.
PO Box 9997
Madhvani Building
Plot 16/4 Jinja Rd.
Kampala
Tel: (256 41) 254 763
Fax: (256 41) 251 468

UNITED KINGDOM
Microinfo Ltd.
P.O. Box 3
Alton, Hampshire GU34 2PG
England
Tel: (44 1420) 86848
Fax: (44 1420) 89899
E-mail: wbpub@microinfo.demon.co.uk
URL: http://www.microinfo.co.uk

VENEZUELA
Tecni-Ciencia Libros, S.A.
Centro Cultural Consorcio Tamanco
Nivel C2
Caracas
Tel: (58 2) 959 5647; 5205; 0916
Fax: (58 2) 959 5626

ZAMBIA
University Bookshop
University of Zambia
Great East Road Campus
P.O. Box 32379
Lusaka
Tel: (260 1) 252 576
Fax: (260 1) 253 952

ZIMBABWE
Longman Zimbabwe (Pte.)Ltd.
Tourle Road, Ardbennie
P.O. Box ST125
Southerton
Harare
Tel: (263 4) 621617
Fax: (263 4) 621670

RECENT WORLD BANK TECHNICAL PAPERS *(continued)*

No. 310 Elder and Cooley, editors, *Sustainable Settlement and Development of the Onchocerciasis Control Programme Area: Proceedings of a Ministerial Meeting*

No. 311 Webster, Riopelle and Chidzero, *World Bank Lending for Small Enterprises 1989-1993*

No. 312 Benoit, *Project Finance at the World Bank: An Overview of Policies and Instruments*

No. 313 Kapur, *Airport Infrastructure: The Emerging Role of the Private Sector*

No. 314 Valdés and Schaeffer in collaboration with Ramos, *Surveillance of Agricultural Price and Trade Policies: A Handbook for Ecuador*

No. 316 Schware and Kimberley, *Information Technology and National Trade Facilitation: Making the Most of Global Trade*

No. 317 Schware and Kimberley, *Information Technology and National Trade Facilitation: Guide to Best Practice*

No. 318 Taylor, Boukambou, Dahniya, Ouayogode, Ayling, Abdi Noor, and Toure, *Strengthening National Agricultural Research Systems in the Humid and Sub-humid Zones of West and Central Africa: A Framework for Action*

No. 320 Srivastava, Lambert and Vietmeyer, *Medicinal Plants: An Expanding Role in Development*

No. 321 Srivastava, Smith, and Forno, *Biodiversity and Agriculture: Implications for Conservation and Development*

No. 322 Peters, *The Ecology and Management of Non-Timber Forest Resources*

No. 323 Pannier, editor, *Corporate Governance of Public Enterprises in Transitional Economies*

No. 324 Cabraal, Cosgrove-Davies, and Schaeffer, *Best Practices for Photovoltaic Household Electrification Programs*

No. 325 Bacon, Besant-Jones, and Heidarian, *Estimating Construction Costs and Schedules: Experience with Power Generation Projects in Developing Countries*

No. 326 Colletta, Balachander, Liang, *The Condition of Young Children in Sub-Saharan Africa: The Convergence of Health, Nutrition, and Early Education*

No. 327 Valdés and Schaeffer in collaboration with Martin, *Surveillance of Agricultural Price and Trade Policies: A Handbook for Paraguay*

No. 328 De Geyndt, *Social Development and Absolute Poverty in Asia and Latin America*

No. 329 Mohan, editor, *Bibliography of Publications: Technical Department, Africa Region, July 1987 to April 1996*

No. 332 Pohl, Djankov, and Anderson, *Restructuring Large Industrial Firms in Central and Eastern Europe: An Empirical Analysis*

No. 333 Jha, Ranson, and Bobadilla, *Measuring the Burden of Disease and the Cost-Effectiveness of Health Interventions: A Case Study in Guinea*

No. 334 Mosse and Sontheimer, *Performance Monitoring Indicators Handbook*

No. 335 Kirmani and Le Moigne, *Fostering Riparian Cooperation in International River Basins: The World Bank at Its Best in Development Diplomacy*

No. 336 Francis, with Akinwumi, Ngwu, Nkom, Odihi, Olomajeye, Okunmadewa and Shehu, *State, Community, and Local Development in Nigeria*

No. 338 Young, *Measuring Economic Benefits for Water Investments and Policies*

No. 339 Andrews and Rashid, *The Financing of Pension Systems in Central and Eastern Europe: An Overview of Major Trends and Their Determinants, 1990-1993*

No. 340 Rutkowski, *Changes in the Wage Structure during Economic Transition in Central and Eastern Europe*

No. 341 Goldstein, Preker, Adeyi, and Chellaraj, *Trends in Health Status, Services, and Finance: The Transition in Central and Eastern Europe, Volume 1*

No. 343 Kottelat and Whitten, *Freshwater Biodiversity in Asia, with Special Reference to Fish*

No. 344 Klugman and Schieber with Heleniak and Hon, *A Survey of Health Reform in Central Asia*

No. 345 Industry and Mining Division, Industry and Energy Department, *A Mining Strategy for Latin America and the Caribbean*

No. 347 Stock and de Veen, *Expanding Labor-based Methods for Road Works in Africa*

No. 350 Buscaglia and Dakolias, *Judicial Reform in Latin American Courts: The Experience in Argentina and Ecuador*

No. 352 Allison and Ringold, *Labor Markets in Transition in Central and Eastern Europe, 1989-1995*

No. 353 Ingco, Mitchell, and McCalla, *Global Food Supply Prospects, A Background Paper Prepared for the World Food Summit, Rome, November 1996*

No. 355 Lambert, Srivastava, and Vietmeyer, *Medicinal Plants: Rescuing a Global Heritage*

No. 358 Ayers, Busia, Dinar, Hirji, Lintner, McCalla, and Robelus, *Integrated Lake and Reservoir Management: World Bank Approach and Experience*

No. 360 Salman, *The Legal Framework for Water Users' Associations: A Comparative Study*

THE WORLD BANK

13912

9 780821 339121